Saskatchewan
Health

Public Health / Population Health Services in Saskatchewan

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Executive Summary

Recently, questions have been raised by health districts regarding the services and the level of services to be provided by health districts with respect to public health. In particular, they want to know how much flexibility health districts have in making changes to currently delivered services.

In the early years of health renewal, many Saskatchewan documents provided useful information regarding this issue. However, while these documents were a framework for services, they lacked the detail to support operational decision-making now required by the health districts.

With the support of Health District CEOs, public health professional groups and other key stakeholders were invited to participate in an interdisciplinary process to make recommendations to the department on the specifics of public health programs for Saskatchewan. This work was to build on the work in other jurisdictions and take into consideration the needs of Saskatchewan residents and the fiscal realities of health districts. The final report, Public and Population Health Services in Saskatchewan is being submitted to the Deputy Minister's office.

This document identifies public health programs activities as follows:

- *Healthy Families*: healthy birth outcomes, healthy child development, dental disease, food security, child abuse prevention, prevention of risk behaviours in youth, healthy sexuality, decrease social isolation in seniors.
- *Chronic Disease Prevention*: physical activity, tobacco use reduction, good nutrition, substance abuse prevention, stress management
- *Safe Communities Environments*: safe food and water, safe living conditions, health hazard reduction, sustainable development, emergency response, injury prevention, violence reduction
- *Communicable Disease Control*: immunization; communicable disease control; STD control; outbreak control; TB control; infection control, travel medicine

The work on the broad theme areas is mandatory, as is the work on each specific issue. The flexibility for health districts is in how they work towards the issue goal. Sample objectives, indicators and evidence-based strategies have been included to give health districts an idea of how they might accomplish the issue goals. Health districts will be expected to develop plans that will identify how they will work towards these goals by developing locally attainable objectives and taking into account local data, resources and community expectations.

The Saskatchewan Commission on Medicare (Fyke Report), recommended that everyday services be developed through primary health service teams. One component of these teams would be population and public health programs and services. It also recommends that public health,

health promotion and disease and injury prevention strategies be continued or developed. This document, while not developed to respond to the Fyke Commission, serves to outline both the focus and strategies for these recommendations. Feedback from Health Districts identified that *Public Health/Population Health Services in Saskatchewan* "is a reasonable synopsis for public/population health - an important and timely document to define and clarify the role of Public Health at a time of proposed changes to the system."

It is clear that this document is not a statement about where public health programs and services are at this point in time in Saskatchewan. Rather it is a statement or vision of what population and public health services should be. *Public Health/Population Health Services in Saskatchewan* will serve to guide decision making in order to achieve better health outcomes with the limited resources available. As one person wrote in the consultation process, "even if this document went no further (i.e. stayed in draft form), it will support health districts".

The issue of needing more resources to implement the full scope of sample strategies is a key consideration. There will never be enough money in the system. This document provides the flexibility to match local needs and resources with the provincial mandate of working on specific issue goals. It is flexible enough to serve as a framework for 1 health district or 33; for one cultural group or several; for rural communities as well as urban. In other words, it is a template for public and population health programs and services in the province.

Key Considerations

Questions have been raised by health districts regarding the services and the level of services to be provided by health districts with respect to Public Health. In particular, they wanted to know how much flexibility health districts have in making changes to currently delivered services.

In the early years of health renewal, the following Saskatchewan documents provided useful information regarding this issue.

- Population Health Goals for Saskatchewan, Saskatchewan Provincial Health Council, 1994
- Working Together Toward Wellness Series by Saskatchewan Health which included:
  - A Saskatchewan Vision for Health, 1992
  - Health District Development Guide, 1992
  - Users' Guide to The Health Districts Act, 1993
  - Planning for Saskatchewan Health Districts, 1993
  - A Guide to Community Health Centres in Saskatchewan, 1993
  - A Guide to Core Services for Saskatchewan Health Districts, 1993
  - Healthy Needs Assessment Guide for Saskatchewan Health Districts, 1993
  - Guidelines for Developing an Integrated Palliative Care Service, 1994
  - Supporting Wellness: Supportive Services in Saskatchewan Health,1995
  - A Framework for Accountability, 1995
- The Transfer Agreements, 1995 (contracts developed between each health district and Saskatchewan Health at the time of transfer of services to the districts)
- The Public Health Act, 1994

Since that time, other documents have provided guidance to the health districts. These include:

- Focus on Health: Public Health in Health Services Restructuring, Canadian Public Health Association, 1996
- Population Health Promotion Model: A Resource Binder, Saskatchewan Health, 1997
- Population Health Promotion Model: Supplemental Resources, Saskatchewan Health, 1997
- Needs Assessment Framework for Health Districts and Their Partners, Saskatchewan Health, 1999
- A Population Health Promotion Framework for Saskatchewan Health Districts, Saskatchewan Health, 1999

It was recognized, however, that while these documents are a framework for services, they lack the detail to support operational decision-making now required by the health districts. As well, various venues have identified the need for fundamental program goals, objectives/standards for the delivery of public health services in the province.

In order to gain a better understanding of what is happening nationally, the Department surveyed other jurisdictions. In other geographic regions, the key areas for Public Health programming appear to be:

- Healthy Families: reproductive health; postpartum; dental health; school health; breastfeeding; parenting; sexual health
- Safe Communities/Environments: injury prevention; violence reduction; food safety; water quality; sewage disposal; rabies control
- Communicable Disease Control: immunization; communicable disease control; STD control; outbreak control; TB control; infection control
- Chronic Disease Prevention: tobacco reduction; nutrition; heart health; physical activity promotion; substance use prevention

*This document seeks to **balance**: the mandatory (issue goals) with the flexible (locally identified objectives, indicators and strategies to address the goals). provincial direction with the specific needs and resources of local communities and Health Districts.*

The Department was aware that a more in-depth level of program detail was needed to support health districts in Public Health programming and proposed a participatory process to develop the framework and the objectives/ standards for Public Health programming in the province. Public Health professional groups and other key stakeholders were invited to participate in an interdisciplinary process to make recommendations to the Department on the specifics of Public Health programs for Saskatchewan, building on the work in other jurisdictions and taking into consideration the needs of Saskatchewan residents and the fiscal realities of health districts.

This project was not intended to identify core versus non-core programs, nor a blue print for public health funding. Rather, it was to begin to identify and to clarify the range of services that Public Health be engaged in and some approaches that would strengthen the practice of Public Health by incorporating a more population health promotion focus. Public Health has traditionally been associated with disease prevention and regulatory protection services related to, for example, communicable disease control, immunization, safe food and water and with health education programs targeting specific groups or issues (e.g. nutrition, dental heath, prenatal health). These programs and services continue to be the foundation upon which district health boards are expected to meet public expectations and legislative obligations when responding to immediate and urgent public health issues. However, in addition to these everyday, narrowly defined public health challenges, it is recognized that there are broader public health issues in which districts should play a significant role. This important work, involving actions such as building capacity in communities, health promotion, intersectoral collaboration, etc., is often identified as the "new public health" (see glossary in the document). It is the hope of the project that appropriate attention is given to both traditional public health and the important work of "new public health".

*"This document is **a template** to be used whether we have one health district or 33; one homogeneous population or several different cultures"* .... (David Butler-Jones, Chair, Project Steering Committee)

This project will link with/take into account the following projects currently underway:

- the indicators of health status and health service delivery/utilization
- environmental health strategy
- performance management and accountability initiative of central government
- Fyke Commission

Rationale/Purpose for the Public Health Services Project

There are several reasons that this project began. They include:

1. Health districts were requesting guidelines from Saskatchewan Health.

2. It is an extension of the Public Health Act (Part II, section 3) which states that the Minister may establish goals and standards for public health programs and services.

3. Many programs delivered by the health system have some type of service guidelines, policies or standards. The following are some examples:
   - Drug formulary
   - Physicians' clinical practice guidelines
   - Home care policy manual (outlines mandated core services)
   - Program guidelines for special care homes
   - Personal care homes service standards
   - Mental health service policies, guidelines and standards
   - Criteria for primary health services' sites
   - Acute care definitions of service levels for emergency services level A and B.
   - Acute and Emergency's work on a provincial framework for decision making re: programs to be delivered in community hospitals and community health centres.

   All of these serve as a guide to professionals for programming. Public Health is one of the few areas in health where no such framework exists.

4. Public Health is a critical player, ***but not the only player***, in the population health agenda. Public Health can help move the agenda forward particularly if it is tasked with setting standards/ goals/ objectives/ indicators, ***in collaboration with other sectors/partners***, that support population health and a population health promotion approach. Currently there is no mechanism in the system to document the results of strategies or comprehensive population health promotion approaches. While local data may be available, there is no provincial picture or data on population health issues.

5. This process has the potential to develop a common understanding of lead roles and shared responsibility for both the Department and health districts.

It is NOT about how much we spend, but about how we use our resources. There will never be enough money, so we need to use what we have wisely.

Intersectoral work *and* ***collaboration*** *is the key to the success of population and public health services.*

Assumptions for the Project

The Steering Committee agreed that the following assumptions were critical to the work of this project:

1. Health districts will be expected to implement a comprehensive approach including strategies from each key area, based on local data, identified needs and available local resources.

2. The Population Health Promotion Framework will be the model on which the suggested programs and approaches are built.

3. The principles underlying all Public Health programs will be based on the Population Health Promotion Framework and include:
   - ✓ shared responsibility - empowering practice and participation of community in decision-making
   - ✓ partnerships for collective action
   - ✓ upstream approaches to address root causes
   - ✓ intersectoral collaboration
   - ✓ evidence based
   - ✓ multiple strategies in multiple settings at multiple times
   - ✓ determinants of, and barriers, to health are addressed

4. Legislative requirements must be fulfilled by public health workers and health districts.

5. There are several "key" variables for public health. Two of these are key functions and key competencies.

   Key Public Health Functions (adapted from ***Journal of Public Health Policy, Vol.19, No.4, 1998, pg. 394-95)***:
   The health district must invest in the following functions to promote and protect the health of their communities:
   1. health promotion processes
   2. disease and injury prevention
   3. participate in, and foster, the intersectoral work in addressing the determinants of health
   4. health status monitoring and disease surveillance
   5. investigation and control of diseases
   6. protection of the environment, workplaces, housing, food and water
   7. laboratory services to support disease control and environmental protection
   8. health education and information
   9. community mobilization for health-related issues
   10. targeted outreach and linkage to personal services
   11. public health services quality assurance and accountability
   12. education and development of public health professionals
   13. participation in policy development, planning and administration.

   Key Competencies for Public Health Practice ***(adapted from Journal of Epidemiology and Community Health, 1999, 53:2 p. 65):***
   1. measuring health status
   2. disease surveillance, prevention and control
   3. promoting health and well-being
   4. strategic and program planning
   5. policy development
   6. community organization and mobilization
   7. facilitation and group development
   8. evaluation/critical analysis
   9. information management and research
   10. advocacy
   11. communication and coordination
   12. intersectoral collaboration

13. management and leadership
14. working strategically to pursue the overall goal of community well-being

Prerequisites for Success

The Steering Committee of the Public Health Services Project has accepted the sub committee reports. These reports outline program areas and goals that health districts need to address and outline sample objectives, indicators and evidence-based strategies that could be used to reach the stated goals.

Public Health works with many groups with many different mandates, accountabilities and jurisdictions. Co-operation and collaboration are essential to address the public's health. It is therefore essential that we respect and clarify their responsibilities and work collaboratively to achieve the best health for all.

During their review, the Steering Committee identified several issues that will impact the ability of this project to be successful in moving the processes and programs forward in the province to fulfil the public health mandates of promotion, prevention and protection. These issues include:

1. Mechanism to Engage Government and Health Districts in This Work

Given the urgency of acute care and the huge budgetary allocations needed to address treatment issues, the important work of prevention, promotion and protection is often a lower priority for government, boards of health and senior managers of health districts. It will be a challenge to engage department of health officials and health district decision-makers in the issues and have them commit the necessary resources to implement the recommendations of this Public Health Services Project given the competing priority and demand of acute care. Decision-makers must create the "buy in" to the vision of wellness and reduce the ambiguities and inconsistencies in their messages. Some health districts have made this commitment already and are proceeding to give strong support to public health programs and services and population health promotion approaches. Still, support for health districts is needed. Orientation sessions for health boards will be critical in the area of population health promotion and boards' responsibilities under the Public Health Act. This could be accomplished in an orientation for all new board members after board elections. Collaboration between Saskatchewan Association of Health Organizations (SAHO), Saskatchewan Population Health Promotion Partnership, other committed agencies and the Department would be critical for this to be successful. A similar process could be used for orienting new Department staff and senior Department decision-makers.

2. Influencing the Political Climate and the Governance System Regarding Pubic Health

Health is considered a priority among the public according to current polls but the public's interest generally focuses on availability of treatment services. There is relatively little attention to primary prevention because there is never a clear beneficiary. (It is possible to say that Mr. X needs heart surgery but it is not possible to say with certainty that Mr. Y would have needed heart surgery had he not been physically active, eaten well and avoided tobacco. Only Mr. X's urgent plight – the need for heart surgery - will appear in the media.)

3. How Services are Delivered

The heart of population and public health is delivering services appropriate to the needs of people in their communities. Inherent in this process is the necessity to engage the public at a local level in identifying issues and planning how best to resolve them. Thus a system based on the principles of local involvement is vital to the success of programs and services outlined in this document. Many functions require higher levels of organization to co-ordinate services, provide expertise, develop policy and set standards. Thus, there is a need for an organized system at the service area level and at the provincial level.

4. Intersectoral Collaboration

The other critical success factor for this work will be intersectoral collaboration not only at provincial level and national levels, but also at a local one. This process is well underway across sectors in the province with regional and local structures and initiatives throughout the province to varying degrees. A number of public health initiatives are also supported by national work. Intersectoral collaboration takes time and resources, but is critical to addressing the determinants of health and making programs work more effectively in the community. This approach needs to be adequately resourced and fostered and public health professionals, as part of their district organizations, have an important role to play in carrying health's perspective and resources to those intersectoral tables.

5. Models to Support Intersectoral Work

It will be necessary to foster the climate for intersectoral work and perhaps even gather different departments and agencies together to work in a 'health and social centre model'. Physically locating them in one place will support the development of relationships that are a key to the success of intersectoral work. A human services model where different players are housed under a 'common roof' together deserves serious consideration as a vehicle to:

- ✓ bring health and other human resources to smaller communities
- ✓ provide a base from which primary health services and public health programs directed at individuals can be delivered
- ✓ serve as a focus for population health promotion initiatives, both health-sector specific and intersectoral
- ✓ provide easier local access to a variety of programs and services

6. Human and Financial Resources to Undertake a Population Health Promotion Approach

A number of approaches in this report will be new to some of players in the public health system. Many health districts have forged ahead and are delivering broader population health promotion programs with the residents in their area. Many have taken advantage of the resources developed by Saskatchewan Health and whatever training opportunities present themselves to foster more skill around implementing a population health promotion approach. However, for the programs and services outlined in this report to be implemented, there will be a need to develop a broad Public Health human resource plan for re-training, re-orientation and ongoing professional development via educational opportunities, professional memberships and active involvement in professional bodies.

Health districts also need access to the full range of public health skills and knowledge. Given resources and geography, these are not always available. Saskatchewan Health, SAHO, health districts and other committed partners (e.g. Saskatchewan Population Health Promotion Partnership, Health Canada, Prairie Health Promotion Research Centre, etc.) share a responsibility to facilitate access to this range of qualified and competent professionals in order to fully implement a population health promotion approach and public health programs.

7. Role Clarification

In developing this report, the steering committee identified that it was sometimes difficult to find the balance between provincial direction and the need for health districts to respond to local needs. This will be an ongoing issue in several areas and these questions will need to be resolved in order to implement this project. Clarity of roles and responsibilities in the following areas is critical:

- ✓ data –health districts need support and the necessary skills to analyze data in order to make the best program decisions. Not all health districts have these skills or access to the appropriate data. The Department needs to play a larger role in facilitating access to data or providing a 'clearinghouse' function with regards to where the data and necessary skills can be found to interpret the data. There is some discussion about the value of different types of data. In population health promotion approaches there is a need for both quantitative and qualitative data. More work needs to be done with decision-makers at all levels to create understanding that both types of data are valuable and valid and that each yields information necessary to making the best program decisions.
- ✓ resources – This report was developed to ensure that the system is making the best use of scarce resources. Given the growing body of evidence on the effectiveness of population health promotion approaches and public health programs, both government and health districts need to prioritize this work through dedicated budget lines and funding for the necessary staff to do this work. Both the Department and health districts must allocate resources to the public health agenda. This includes planning, implementation and evaluation resources. There is a need to review and realign existing resources to ensure that they best meet the needs of the districts. This may mean better use of resources for planning, data collection and analysis, best practice strategies, evaluation, etc.
- ✓ strategic directions – The original vision during health reform was for a wellness system. Response to the articulated vision has been varied at different levels of the system. While there is little indication of support for the vision in some quarters, in others, there is a strong commitment to providing promotion and prevention programs. Such ambiguity is difficult for front line workers as they compete with the treatment sector for scarce resources and recognition. In determining priorities, the critical need to reduce the risk of illness and disability through public health programs and population health promotion approaches must be given an appropriate weight compared with treatment services in both department and health districts' strategic plans.
- ✓ accountability – Given the ever increasing demands from the public for accountability, a mechanism to monitor public health services and respond to accountability issues will need to be developed.
- ✓ program support/expertise –Saskatchewan Health has played a role in providing support to health districts around program directions, program planning, evaluation, etc. Some of the larger health districts have also played this role as they develop and evaluate programs and share with the other health districts through a variety of forums. This is a co-operative agreement and one that exists out of the need regionally for more expertise than that which currently exists in most of the smaller health districts. It will be critical to determine the role of health districts/regions and the role of government in this area and to acknowledge the contributions of all.

8. Research and the Need for Ongoing Improvements

A new focus on public health research is needed to accompany this clarification of public health services. This focus will firmly establish the capacity in Saskatchewan for analysing community needs for health promotion and disease prevention; evaluating the effectiveness of current public health practices; developing and testing new approaches; and disseminating information about effective practices. A consistent and concerted effort will be needed to make this initiative sustainable. Without this focus, the Public Health Services project will be one more attempt to bring Public Health practice up to date, which will quickly become out-dated and ignored since it represents only a snapshot of best practice at one point in time. Much effort is going into designing processes in acute care to encourage an evidence-based, outcomes-focussed, client-centred approach; the same effort must be applied to Public Health Services.

To meet these goals, health districts, Saskatchewan Health, the University of Saskatchewan and University of Regina and other organizations will need to be involved. A public health research focus should consist of the following broad strategies:

i. Optimize the involvement of researchers in advancing the leading edge of public health research. Both community-based researchers, and those at both universities, have much to offer in this regard, but issues of public health are not prominent in the realm of publicly funded research. This might be addressed with the support of existing research organizations, such as the Health Services Utilization and Research Commission (HSURC) and the Saskatchewan Population Health and Evaluation Research Unit (SPHERU). These units could be encouraged to give high priority to the needs of the public health research agenda. It could be within the mandate of HSURC to focus some of its research in the area of public health services. As well, the research granting arm of HSURC could designate public health service as a special category of funded research and attract more interest from the research community. SPHERU, with staff and links to both the University of Saskatchewan and the University of Regina, has a mandate that could encompass greater attention to evaluation of population health promotion interventions in the public health sector.

ii. Rebuild Saskatchewan Health's internal capacity to participate in research in support of the district public health mandate. While not duplicating research capacities elsewhere, the Department should ensure that a core capacity exists "in house" to engage with researchers and districts in joint inquiry, and to interpret and disseminate public health research findings within the Saskatchewan context.

iii. Build the capacity of all health districts to undertake applied research, critical analysis and reflection, as tools for discharging their responsibilities for planning and evaluating public health services. Every district should have personnel and computer resources to undertake community health needs assessment, analysis of competing priorities among needs, population health surveillance, program planning, and program monitoring and evaluation. Less basic, but still essential, resources could be shared on a service area basis among neighbouring districts, including resources for research requiring specialized consultative services or techniques and equipment.

iv. Develop a teaching/research health unit as a partnership between the University of Saskatchewan, the University of Regina, a large urban health district, and Saskatchewan Health, to conduct research on emerging issues in public health (in partnership with one or more other health districts); to test new approaches and programs; and to disseminate findings to all health districts. Saskatoon District Health and the University of Saskatchewan, through the Department of

Community Health and Epidemiology, have had a long history of joint research and development initiatives. These partners have also explored the potential for a new relationship in the context of the current and emerging needs of health districts. Similar units exist in other provinces, such as the PHRED program and the Health Intelligence Units in Ontario, providing an effective partnership between researchers and practitioners for the advancement of public health practice. It is timely to revisit this model as one strategic element in support of core services and practice standards in public health in Saskatchewan.

Technical Reports

Using the "*Public Health Services Project*" Document

The document has been prepared taking into account the need to provide direction to health districts and the health districts' need to be responsive to local needs and situations.

The Steering Committee had much discussion about this and is recommending that work on the goal areas is mandatory, as is the work on each specific issue goal. The flexibility for health districts is in how they work towards the issue goal. Sample objectives, indicators and evidence-based strategies have been included to give health districts an idea of how they might accomplish the issue goals. Health districts will be expected to develop plans that will identify how they will work towards these goals by developing locally attainable objectives and taking into account local data, resources and community expectations.

There is legislation that covers various components of programming and requires a specific response. These areas are noted in the document.

There is some duplication in this document. The committees struggled with this issue and decided that instead of deleting/merging issues with duplication that we would let them stand. This decision is meant to reflect the inter-relatedness/connectedness of programs and the complexity of the human and social condition.

The following examples outline the interconnectedness of an issue (breastfeeding) and also a population (seniors).

Breastfeeding can be addressed in the following issue goals:
- ✓ Healthy birth outcome
- ✓ Healthy child development
- ✓ Food Security
- ✓ Dental Health
- ✓ Abuse prevention
- ✓ Good Nutrition
- ✓ Food and water

Seniors can be addressed in the following issue goals:
- ✓ Dental Health
- ✓ Food Security
- ✓ Physical Activity Promotion
- ✓ Tobacco Reduction
- ✓ Good Nutrition
- ✓ Substance Abuse Prevention
- ✓ Stress Reduction
- ✓ Safe Housing
- ✓ Community Violence
- ✓ Communicable Disease Control (all aspects)

Local health districts and practitioners need and utilize data to identify relative rates of problems as part of needs assessment to guide allocation and focus of

*People, populations and issues are not one dimensional. They are **complex and inter-related**. The duplication in the document reflects the complexity and inter-relatedness of population health and public health programs and services.*

resources. As part of surveillance, indicators serve as part of an early warning system for identification of emerging problems. Indicators and measures are also used for advocating priorities both within as well as outside of the formal health system. Ongoing tracking also assists in following and evaluating efforts to change risk factors, behaviours or outcomes, or the processes themselves. Indicators are also used as a means of better understanding the population that they serve. Most data is collected or captured at the local level and, at whatever level, the data that represents the indicators must also be of interest and relevant to those charged with collecting it. Capacity for analyzing and applying data to the work of districts and practitioners varies. It is thus essential to work collaboratively to ensure the best use of data across the province.

Healthy Families

GOAL AREA: HEALTHY FAMILIES

BROAD GOAL: Families in Saskatchewan will obtain optimal health (physical, social, emotional, cognitive and spiritual) and will be valued and supported by family members, friends and communities.

Context: While the following goals were largely developed for children/youth, it is acknowledged that many activities will be directed at parents who play a key role in nurturing their children. We believe that children thrive within families and communities that can meet their needs as well as providing security, respect and love. By working with parents, families and communities, we support children. These issues do not exclude adults living alone because they, too, are part of the fabric of the community.

In order to address the goal area successfully, health districts must work on the following issue goals.

ISSUE GOALS:

1. To increase the incidence of healthy birth outcomes for families.
2. To increase the number of children achieving age appropriate developmental milestones.
3. To reduce the incidence of dental disease.
4. To improve the food security of all Saskatchewan residents, particularly families with infants and children.
5. To decrease the number of people experiencing mental, physical, emotional or sexual abuse, particularly children.
6. To decrease the incidence of youth engaged in risk behaviours.
7. To promote healthy sexuality and decrease the incidence of teen pregnancy.
8. To decrease social isolation in seniors.

Health districts may choose from the following sample objectives, indicators and evidence-based strategies for each issue goal or develop their own to accommodate local needs and resources. Rationale for each issue goal is also included.

1. To increase the incidence of healthy birth outcomes for families.

Objectives	Indicators	Evidence-based Strategies
By _____ increase the number of preconception health activities with families/ women who are planning a pregnancy.	• Number of families reporting that the pregnancy is planned • Number of women (families) seeking information re pregnancy • Number increase of women seeking counselling for: - Stress - Abuse - Health lifestyles - Tobacco use - Alcohol - Drugs - Physical activity - Number of women using folic acid in pregnancy and before	• Preconception care programs should be offered through a number of venues: - school curricula - work place - media - health professionals • Preconception health counselling to be provided as part of general preventative care: - at annual PAP test - review of birth control - community settings - outreach programs - community centres • Counselling & support for healthy lifestyles (smoking, active living, nutrition, alcohol avoidance, mental health) • Sexual health and family life education programs in schools
By _____ increase the number of women accessing regular prenatal care.	• Percentage of women seeking prenatal care in first trimester • Percentage of women receiving adequate prenatal care throughout their pregnancy	• Community coalition to address issues of access to prenatal programs (time, location, etc) for all pregnant women and their support people • More intensive outreach to pregnant women not accessing prenatal care • Consultation with vulnerable populations to gain input into planning programs to meet their needs.

By _____, ____% of prenatal women will reduce their exposure to risk conditions that will impact on a healthy birth outcome. By ___, there will be a decrease in the rate of low birth weight babies to ____/1000. By __ reduce the % of children born with addictions	• Pregnant women working in smoke free environments • Number of women reporting quitting smoking in pregnancy • Increased number of women discontinuing drug use in pregnancy (addicted babies) • Number of women referred for addiction counselling • Decreased number of women number of abused moms alcohol consumption in pregnancy (FAS babies) • Number of women seeking nutrition counselling and using Folic Acid • Rate of low birth weight babies	• Targeted programs to address risk behaviors - smoking cessation - addiction counselling and referrals • Support and counselling • Prenatal screening (nutrition, violence, isolation, biohazards), early identification and linking to appropriate community resources • Government and private sector to establish healthy public policy to decrease exposure to second hand smoke • Prenatal food supplementation programs such as providing milk voutures • Vitamin supplements • Educate health professionals about FAS • Develop teaching packages that teachers could use for themselves on FAS • Community coalitions to address the issue of FAS • Housing projects to address issues of safe shelter and poverty • Prenatal education early in pregnancy emphasizing link between parental lifestyle and birth outcome – nutrition, smoking ,etc. • Education in schools re healthy sexuality, and reality and risky behaviors (done by health professionals)

Rationale

Seeking prenatal care early in one's pregnancy and maintaining a consistent pattern of care are positive actions towards having a safe pregnancy and a healthy baby. Women who do not receive adequate prenatal care may be at risk for pregnancy complications as well as negative birth outcomes such as stillbirths, low birth weight babies, and infant deaths. Adequacy of prenatal care utilization provides an indication of the number of women who may experience less than optimal birth outcomes. As well, it provides an indication of the number of women who may experience difficulties in accessing prenatal care providers.

Saskatchewan Births:

1997	12,518
1998	12,513
1999	12,276

Birth Weight

In 1997, 2000 infants were born with an at risk birth weight:
28% were Low Birth Weight
72% were High Birth Weight

Low Birth Weight less than 2500 grams are at increased risk for health and developmental problems. Pre-term birth is about 6.6% per 1000 births in Saskatchewan; of these 50 to 70% are preventable.

High Birth Weight over 4000 grams may result in caesarean section or complications of delivery and increased health problems for mom and family. Example: obesity and diabetes in later life.

Infant Mortality

Infant mortality in Saskatchewan is the highest in Canada next to the Territories at 8.4 per 1000 births. Infant mortality rate is a commonly used measure of the overall health status of a population. It reflects not only the nature and quality of health care available to individuals but also general social and economic conditions.

Seriousness/Impact on Population

- Across the life-span for a baby born with a poor birth outcome, there are costs associated with several sectors (education, health, etc.) and for families both in terms of monies and emotions.
- Infant mortality
- Cost of support to one child born less than 2500 grams with disabilities is $48,183 to age one and $676,800 for life
- One FAS baby costs society $1 million
- High cost to provide the multidisciplinary team needed to provide ongoing supports for children born with preventable conditions
- Low Birth Weight increases chances of cerebral palsy, deafness and blindness, epilepsy, learning disabilities and attention deficit disorder

Modifiable Risk Factors

- **Substance Use:**
  Exposure to alcohol and drugs can be harmful to the fetus. Smoking has been linked to an increased likelihood of having a low birth weight baby and is a factor in Sudden Infant Death Syndrome (SIDS). Women often use alcohol and drugs as medicine to counteract the pain of social isolation, abuse, poverty, etc.
- **Pre-pregnancy Weight:**
  Maternal obesity is highly correlated with an increased risk of Gestational Diabetes. Women who are underweight when becoming pregnant and those with low maternal weight gain during pregnancy have an increased risk of having a low birth weight infant.
- **Adequate Nutrition During Pregnancy:**
  Good nutrition contributes to improved birth outcomes. A poor diet can result in either low or excessive weight gain for the mother during pregnancy and for the fetus as well.
- **Gestational Age:**
  Babies who are born premature (prior to 37 weeks gestation) are more likely to be of low birth weight, while those born postmature (42 weeks or more) are likely to be of high birth weight.
- **Prenatal Care:**
  Women who receive a full series of prenatal visits are at lower risk for having a low birth weight baby than women who receive no prenatal care. These visits provide an opportunity to detect threats to the mother and fetus.
  Barriers to women receiving no prenatal care or entering the system further along in their pregnancy include:
    - Limited prenatal care providers in geographically isolated and rural areas.
    - Personal barriers: Lack of transportation and babysitting, timing of visits, appointments, etc
    - Lack of awareness of the benefits of early and continuous prenatal care
    - Personal beliefs: women's experiences, attitudes and beliefs concerning both the health system and prenatal care providers e.g., a perception of an "unfriendly" system and providers, discomfort with physical examinations by a male provider, etc.
    - Lack of understanding by health professionals of family problems
    - Attitudes towards the pregnancy including feelings of ambivalence, fear and denial

  Maternal Age
  Increased maternal age (40 years or more) is a risk factor for gestational diabetes. As well teens and women over 40 are at increased risk for having low birth weight babies.
- **Preconception Care:**
  Information for people planning a pregnancy provides an opportunity to increase:
    - Awareness of health issues (alcohol and drugs)
    - Prevention measures (nutrition - folic acid)
    - Benefits of prenatal care

Evidence-based Strategies

Impediments to accessing and receiving care do exist and include cultural, geographic and socio-economic barriers. These need to be considered when implementing the following:

- Development of personal skills to support choices and empowerment their health care.
- Address the determinants such as poverty, safe environments, personal supports, etc

- Provide supportive environments:
    a) income security
    b) day care
    c) workplace policies
    d) maternity leave
    e) First Nations'/Metis support
    f) abuse shelters
- Identify at risk clients both socially and medically and remove barriers to reaching them and providing education
- Address issues of stress for pregnant women and their families
- Use media to provide preconception health messages re: impact of lifestyle on birth outcomes
- Education in school systems regarding healthy relationships, healthy lifestyle, sexual health
- Increase public awareness of potential problems of limited prenatal care
- Programs to improve the accessibility of prenatal care services: outreach, transportation, babysitting
- Strategies to draw at risk clients: outreach programs, preconception programs
- Educational strategies to promote the benefits of early and continuous prenatal care
- Continue with routine screening for Gestational Diabetes and chromosome abnormalities
- Counselling to individual client problems e.g., abuse, parenting, etc.

Who Should Be Involved

Doctors, obstetricians, pediatricians, nurses, midwives, childbirth educators, public health nurses, early visiting nurses, community health workers, nutritionists, community leaders and groups in partnership with social workers, teachers, the public (to promote healthy communities – colleges, schools), YWCA (women's groups), aboriginal groups, mentors, counselling services (addictions, abuse, family therapist), diabetic education, media, smoking cessation programs, women's shelters, legal assistance, hospital programs.

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2. To increase the number of children achieving age appropriate developmental milestones.

Objectives	Indicators	Evidence-based Strategies
• By ___, increase rates of breastfeeding to ____% at 6 months.	• Breastfeeding rates at 6 months	**Birth:** • Universal screening for risk factors in families(physical, psychosocial, violence, alcohol, drugs) • Breastfeeding support • Discharge planning • Universal hearing high risk register or screening • Home visiting **0 – 3 years:** • Creation of Baby Friendly Places in community using the BFI Implementation Guide for Community Health Settings in Canada. • Immunization • Support and education to parents and childcare providers (attachment, emotional development, injury prevention, nurturing skills, recognition/ potential for violence/abuse, second hand smoke) • Monitoring, assessment and counselling in child health clinics • Innovative home visiting to at-risk (Hawaii Healthy Start, Healthy Babies/ Healthy Children) • Referral to health and social services (housing, childcare etc.) • Work collaboratively to develop toy lending libraries, neighbourhood parenting resource centers • Advocate collaboratively for healthy public policies that support work-family balance • Case coordination **3 - 6 years:** • Ongoing assessment, monitoring and support for at risk families • Consultation and coordination with other service providers • Injury surveillance • Policy standards for child care centers and homes • Community education re: injury reduction • Pre-schools or day care for all children accessible by age 3 Partner with school boards to enhance readiness
• By ___ decrease incidence of child injury by ___	• # of children admitted to hospital with injuries	
• By ___, increase the percentage of children who are "school ready"	• % of children assessed as "school ready"	
• By ___, screen ___% of families to determine risk	• # of families screened	
• By ___, increase parenting knowledge and confidence	• # of parents attending parenting classes	
• By ___, decrease inappropriate use of emergency departments for non urgent care by ___%.	• # of child visits to emergency for non emergency treatment	
• By ___, ___% of families will report consistent use of a family practitioner	• % of children with family practitioners	
• By ___, increase reported use of supports and services (including arts, culture, recreation and faith communities)	• # of young children accessing selected community services	
• By ___, increase # of families linked back to the community	• # of families referred to or linked with community programs	
• By ___, increase # of neighbourhood activities.	• # of local neighbourhood activities e.g.: neighbourhood watch.	

Key Partners

Health, Education, Social Services, community based organizations, families

Rationale

Recent brain neuroscience research indicates that optimal child development is an issue for all children. The development of the brain in the areas of binocular vision, emotional control, habitual ways of responding, and symbol recognition are all complete before age 5. The areas of peer social skill development and language development start within the first year and go though to age 7. (McCain and Mustard). Children in low-income families or neighbourhoods are at higher risk of infant death, low birth weight, developmental delays, increased environmental contamination, increased rates of unintentional and intentional injuries (Healthy Futures).

Number of People Affected

The number of families in Saskatchewan with children under 7 living in poverty is 27.2% or 19,000 compared to rate of 23.7% in Canada. The majority of those are lone parent female led families - 76.6% or 7000 within Saskatchewan. (CCSD 2000). However the aboriginal family poverty rate is 50% compared to 30% within Canada (SIPC, 97). 7 % of children up to age 13 are living in families considered to be dysfunctional. (CCSD 2000). The rates of poor health, hyperactivity, delayed vocabulary and development are higher in low-income families. They are also less likely to be involved in organized sports and other community based recreation (Futures). While the likelihood of risk is higher in low socio economic groups there is no economic cut off where all children are doing well. The greatest % of children at risk is in the lowest socio-economic quintile of population, however because of the size of the middle class, the greatest number of children seen to be at risk are in the middle class. Thus population based strategies are required.

Seriousness/ Impact on Population

A 1996/97 assessment of school readiness indicated that 15% of the population had low cognitive scores and 14% had high rates of behavioural problems (Futures). As noted above, the experience for conception to age 6 is seen to be the most important influence of any time in the life cycle for connection and sculpting neurons. Positive stimulation in the preschool years can increase learning behaviour and health into adult hood. Gains not made in the preschool period cannot ever be recovered, because of the developmental periods of brain growth. Children with low birth weights can result in mental and physical disabilities and death. Prenatal influences such as tobacco and alcohol can lead to permanent brain and physiological changes in later life. Infants and children neglected and abused are at increased risk of injuries, behaviour, and cognitive and social problems later in life. Family members perpetrate 70% of assaults against children under 3 (Healthy Futures).

Modifiable Risk Factors

While socio-economic status in not modifiable by Public Health interventions there is literature to demonstrate that the reduction of stressors within this group and improvement of unstable home environments and family conflict can ameliorate the effect of poverty (SIPH 1997). Secure loving attachment between child and parent/caregiver in first 18 months develops trust, self esteem, emotional control and the ability to develop positive relationships (Healthy Futures). Parental depression is a risk for

development of poor attachment. Children with depressed parents are more likely to be living in low-income versus high-income neighbourhoods (Healthy Futures). While the majority of lone parent families are doing well, they are at increased risk of poor development, if the parents' approach to child rearing is hostile, ineffective, or if they live in extremely poor families or troubled neighbourhoods (Healthy Futures). Cohesive neighbourhoods, high quality day care and having a mother with a higher education level positively affect the school readiness of children as well as school stability (NLSCY). Good prenatal nutrition, and support to pregnant women to reduce alcohol and drug use, smoking and teen pregnancy reduces low birth weight and other problems (SIPH 1994). Positive parenting may reduce the chances of a child developing developmental problems. Positive parenting is defined as a parent who carefully monitors a child's performance, provides a caring environment and encourages independence. (Authoritative Parenting : Healthy Futures). Children who experience neglect, physical abuse among siblings, and witnessing spousal abuse all have a strong influence on later substance abuse and criminal behaviour.

Evidence-based Strategies

For early childhood home based interventions:
The Olds Home-Visiting Project, which uses a nurse for intensive home visiting, demonstrated effectiveness and breaks even from a cost-benefit perspective. An evaluation by Karoly et al, looked at multiple early intervention programs, many of which had proven effectiveness. Cost benefit analysis was done on two, looking at savings in government spending, crime losses and increase in income as a result of the program. The Perry Preschool (1 –2 years in preschool with teacher home visiting) had a $25,00 savings versus $12, 000 cost = $13,000 savings per child. It found statistically significant gains in the areas of IQ short run, achievement short and long term, decreased special education, and income and welfare participation. Children in the program were followed up to age 27.

The Elmira PEIP used nurses to do home visiting (HV) from the 4th month prenatally to the 2nd year of child, for parent education, support network and linkages (followed up to age 15). With high-risk families the savings were $25, 000 versus $6000 costs (a savings of $18,600 per child). There were statistically significant gains in the areas of reduced emergency room visits, and among mothers - reduced child abuse, decreased criminal activity, substance abuse and reduce fertility. Note that the evaluations for effect were not standardized between programs, but designed by each program, so they looked at different factors.

An Ontario study in 1998 *When The Bough Breaks*, demonstrated multiple intersectoral health and social services and employment interventions for parents of children saved $8 for each $1 invested. The more comprehensive the services provided, the more the savings.

For Child Health Clinic interventions:
The Canadian Task Force on Preventive Health Care evaluated interventions to find good evidence based on sound research that demonstrated proven effectiveness. The attachment indicates interventions which PHNs (public health nurses) could do that would have proven effectiveness. Note that it does not have any recommendations in the areas of

- speech-language, which is a traditional area of intervention for pubic health, or
- podiatry

Who Should be Involved

Public Health (public health nurses, nutrition, dental health educators, speech language pathologists, early childhood psychologists,), education, social services (child care, welfare and protection) community

based organizations (early intervention and family support programs), family physicians and primary care providers, municipal and provincial governments.

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3. To reduce the incidence of dental disease.

Objectives	Indicators	Evidence-based Strategies
• By _____ reduce the incidence of early childhood caries by ___%	• % of children with early childhood caries • Number of fluoride varnish programs • Number of children being treated under general anaesthetic	• Programs that provide new parents with knowledge and skills to modify their attitudes and behaviors towards oral health and nutrition • Fluoride varnish applications
• By ____ the average number of decayed, extracted and filled primary teeth of kindergarten and grade 1 children will be reduced to ____.	• Average number of decayed, extracted and filled primary teeth	• Monitor children's oral health status by the DHE screening program (Referrals for treatment included in screening) • Preschool education programs • Application of fluoride varnish in preschool population
• By ____ the average number of decayed, missing and filled permanent teeth in grade 6 children will be reduced to ____.	• Average number of decayed, missing and filled permanent teeth	• Application of dental sealants • Oral health education to improve knowledge base & promote changes in attitude & behavior
• By ____ the ___% of age ____ will have 1 or more dental sealants present	• Number of children aged__ with dental sealants present	• Application of dental sealants
• By ____ a reduction in number of children with no evidence of care by ____%.	• % of children with no evidence of care	• Encourage parents to seek dental treatment
• By ____a reduction in number of children with pain and/or infection present by ____%.	• % of children with pain or infection present	• Educate parents and caregivers on the importance of oral health and early dental treatment • Programs in place for low income families
• By _____ a reduction in number of children with partial caries care by ____%.	• % of children who have partial caries care	• Children identified with dental needs are referred to dentists for dental treatment with follow up on referrals provided
• By _____ K-8 children in identified high-risk schools will be caries free by ____%.	• % of children in K-8 in high risk schools who are caries free	• Necessary programs in place to help low income families. (MSB, Social Services, Sask. Child Benefit & Family Health Benefits Programs)
• By ____ reduce tooth decay in school-aged children by provision of weekly fluoride mouth-rinses.	• Number of fluoride mouth-rinse programs in schools	• School based fluoride mouth-rinse programs
• By ____ a reduction in number of fractured permanent teeth by ____%.	• Average number of permanent fractured teeth • Number of mouth safety presentations	• Promotion of the use of mouth guards
• By ____increase knowledge and practices of school age children and their families.	• Number of annual dental health presentations to school age children	• Oral health education • Oral health promotion through resource kits for schools and

	• Number of schools using dental health resource kits • Number of schools receiving oral health promotion packages • Number of new mothers receiving oral health resource packages	preschools • Pre-school screening programs.
• By ____ increase the usage of the Building Independence Dental Benefits Program, to decrease the unmet dental needs of children and youth.	• Number of people using the Dental Benefits Program.	• Health professionals encourage enrollment and usage of benefit programs • Educate low-income families of the importance of early dental treatment
• By _____ increase the percent of people served by community water with optimal levels of fluoride.	• Number of fluoridated communities	• Community water fluoridation
• By _____ increase the use of fluorides to children not receiving optimal levels of fluoridated water. (Especially communities at high risk)	• Number of fluoride varnish programs • Number of parents brushing their children's teeth 2x day with fluoride toothpaste	• Fluoride varnish applications • Public Health Nurses conduct an oral screening at CHC's (child health clinics) and refer children at high risk for fluoride therapies
• By _____ reduce smokeless tobacco use to an incidence of no more than ____ per 1000.	• % using smokeless tobacco. • Number of smokeless tobacco presentations • % of oral pre-cancerous lesions • Number of people diagnosed with oral cancer	• Tobacco education to help youths make their own decisions for a healthier lifestyle • Involvement of Sports Associations to discourage use of tobacco during sports activities • Tobacco education to increase knowledge and skills to facilitate prevention of oral problems • Legislation restricting sale of tobacco products to minors.

Key Partners

Dental health educators, public health nurses, public health nutritionists, dentists, Social Services, health districts, Saskatchewan Health, addictions services, teachers, school counsellors, school divisions, interdisciplinary health agencies and parents.

Rationale

The World Health Organization (WHO) sets acceptable standards for the health of populations of both developed and industrialized countries throughout the world. deft/DMFT – is a universal indicator to measure dental disease. "deft" refers to average number of decayed, extracted, filled primary teeth. "DMFT" refers to average number of decayed, missing, filled permanent teeth. The WHO accepts the deft/DMFT as one of the appropriate indicators of dental status among populations. WHO endorses oral

health as an integral component of primary health care, and has developed global indicators of oral health status.

As reported in the first annual report in 2000, *Health Care in Canada*, Statistics Canada states: "In 1998/99 Canadians of all income levels are about equally likely to have visited a family doctor in the last year. The same is not true for dentists. With each step up the income ladder, Canadians were more likely to have visited a dentist. Only 40% of low income Canadians reported receiving dental services compared to just under 80% of the higher income families". In the same report, fluoridation is listed as one of the ten great public health achievements of the century. "Public Health has had impressive historical achievements that have significantly improved and reduced the burden of disease in Canada."

In the first ever U.S. Surgeon General's report on oral health was released on May 25, 2000, Dr. David Satcher identifies "oral health as a silent epidemic of dental/oral disease that burdens some population groups and calls for a national effort to improve oral health".

Number of People Affected

Results from 1998-99 Saskatchewan Dental Health Educator screening program:

- The percent of children with no evidence of dental care are:
  - Kindergarten- 15.29%
  - Grade 1- 12.39%
  - Grade 6- 4.92%
- The percent with pain and/or infection are:
  - Kindergarten – 3.04%
  - Grade 1- 3.64%
  - Grade 6 – 0.87%

41% of Saskatchewan have access to adjusted or natural fluoride with optimal levels

Covered populations in Saskatchewan: (Covered Population Handbook)

- Age 1 to 4 = 54,771
- Age 5 to 9 = 77,441
- Age 10 to 14 = 80,814

Seriousness/Impact on Population

- Dental decay, pain and discomfort
- Acute & chronic infections (dental abscesses, periodontal disease)
- Early tooth loss
- High dental treatment costs
- School absenteeism
- Compromised general health
- Compromised nutrition, speech and language development, self-esteem

Modifiable Risk Factors

- Lack of knowledge
- Neglect of oral care and treatment

- Lack of finances
- Lack of oral hygiene
- Lack of dental treatment
- Lack of topical fluoride therapies
- Improper feeding practices
- Improper snacking
- Tobacco use
- Dental injuries

Evidence-based Strategies

- Education to parents to facilitate proper oral care from infancy via post natal programs (e.g.; hospital new mother oral health packages, postnatal support groups); CHC's (PHN's oral screening/postnatal visits, fluoride supplementation, nutrition info, breastfeeding and thumb-sucking.); daycares/playschools (DHE's dental visual screening and follow up, dental education to caregivers, preschool resource kit circulated, presentations and informational packages distributed, tooth-brushing programs)
- Identifying children with high risk/high levels of dental disease and referral to dentist for treatment
- Increasing oral health knowledge and practices of school age children and families:
    - Dental education and skill development through classroom presentations
    - Tooth-brushing programs
    - School resource kit circulated
    - Parent consultations
- Initiating school-based Fluoride Mouthrinse Programs targeted to children with high risk/high levels of dental disease
    - fluoride mouthrinse programs reduce tooth decay by approximately 25%
- Promotion of community water fluoridation, fluoride supplementation/guidelines, fluoride varnish programs and fluoride therapies:
    - fluoride varnish applications reduce tooth decay by 30-40%
    - reduction of tooth decay through community water fluoridation by 30-40%
- Increasing the oral health knowledge of parents/caregivers and teachers via oral health promotion at health fairs, trade shows, teacher conventions, special events and displays
- Promotion of regular dental care for all ages
- Programs that provide some services for low income families; e.g.: Social Services, MSB, Saskatchewan Child Benefit and Family Health Benefits programs, dental pilot projects (Saskatoon, Prince Albert)
- Dental sealants
- Use of mouthguards to prevent injuries

Consequences of Not Responding

- Tooth/oral disease
- Chronic and acute infections
- Nutritional concerns
- Speech and language problems
- Increase in tobacco use and dental injuries
- Neglect of oral care and treatment
- High cost of dental treatment

- Compromised general health

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4. To improve the food security of all Saskatchewan residents, particularly families with infants and children.

Objectives	Indicators	Evidence-based Strategies
• By__ increase by __% the proportion of families with young children who have access to a healthy diet that meets their nutritional needs while maintaining their self-worth & dignity (A similar objective for all Saskatchewan residents could also be developed. See the section on nutrition for further detail.)	• Percent of families with young children who are food insecure • absolute & relative child poverty rates • Number of food bank users; number of child food bank users • cost of a nutritious food basket in relation to income • existence of partnerships, including citizens affected by the issue, addressing the broad determinants of health in relation to food security • the percent of children under 5 years assessed for nutrition, feeding and growth problems and referred for help if needed	• Work in collaboration with government sectors, labour, and community partners to ensure that sufficient income is available to families of young children to meet basic needs including food • Develop the capacity of parents, health and childcare workers, nutritionists, government officials, social workers, citizen groups and the community in general to address food security issues • Encourage groups to develop a vision, plan & implement programs, attain and share resources and advocate for the implementation of sound infant, child and family food-related policies/ legislation • Support and foster the development and implementation of programs and initiatives to address food security which involve the community • Advocate for supports for families of low socio-economic status that enable them to retrain for or re-enter the work force • Implement evidence-based nutrition & growth standards for all infants and children in primary care settings (early postpartum and public health settings). Provide counselling & referral services as needed • Support research necessary for advocacy and effective program development
• By __, ___% of pregnant and lactating women on social assistance receive adequate income to consume a healthy diet. • By__ increase to at least __% the proportion of pregnant woman who receive appropriate nutrition and health care	• Incidence of low birth weight infants • Number of infants with avoidable hospitalizations • Prenatal contacts • Percent at-risk women receiving appropriate support • cost of a nutritious food basket in relation to income	• Work closely with Social Services and other partners to ensure that sufficient income is provided to meet basic needs including an adequate food allowance for pregnant and lactating women and their families • Ensure expectant families are aware and have early and easy access to prenatal programs.

• By __ increase breastfeeding initiation rates by __% • By __ increase the proportion of mothers who breastfeed their infants at 2 months by __%; at 5-6 mo. by __% • By __ increase exclusive breastfeeding duration rates at 2, 4 and 6 months by __, __, __% • By __ decrease the number of avoidable hospitalizations, due to illnesses preventable by exclusive breastfeeding, by __%.	• Breastfeeding initiation rate • Breastfeeding rate at 2 mo. • Breastfeeding rate at 5-6 mo. • Exclusive breastfeeding rates at 2, 4, 6 mo. • # avoidable hospitalizations • # postpartum contacts • existence of appropriate content in school curricula	• Implement the Steps to the Baby Friendly Initiative in hospitals, clinics, offices, and community settings. • Advocate for the adoption of the WHO Code For Breast- milk Substitutes. • Provide and refer to lactation support services in hospitals and the community to ensure early access and assistance to postpartum families • Ensure that the benefits of breastfeeding and the availability of information & resources are included in professional curricula (medical, nursing, pharmacy, dental, social work & nutrition &dietetics) as well as in school health and prenatal education
• By __, __% of employers of women will provide flexible work arrangements to ensure they can provide breast milk to their infants when they return to work. • By __, decrease employee absenteeism rates by __%	• Existence of workplace policies consistent with promotion of breastfeeding and support of families with young children • Employee absenteeism rates	• Together with business, labour, government sectors and community advocate for -flexible work arrangements which allow mothers to provide their infants breast milk while returning to work. - special supports for families of low socioeconomic status tied to retraining or re-entry into the work force
• By __, __% of employers of women and men will provide access to appropriate, affordable, licensed childcare for those who desire it for their infants and children • By __, __% of all childcare facilities will offer nutritious choices and follow safe food handling practices	• # of infants children enrolled • % of employers providing access to childcare • % of childcare facilities using nutrition and food safety standards • % of childcare operators who successfully complete a food - related course	• Together with business, labour, government sectors and community advocate for appropriate, affordable childcare spaces • Facilitate educators, healthcare and childcare workers to promote healthy, safe food choices and healthy nutrition behaviours • Encourage parents to work with caregivers to improve food offered in childcare facilities
• By __ increase by __% the proportion of school feeding programs which require participation by students and parents wherever possible	• % of schools with feeding programs which promote parent participation and reduce nutritional inequities	• Ensure schools are aware of funding opportunities for school feeding programs. • Facilitate schools in their efforts to strengthen feeding programs based on best practices.

Key Partners

Food security is a complex community issue requiring involvement of parents, community groups such as food security programs, churches and service clubs, and Social Services, Health and Education professionals.

- Please note, a longer report is available.

Rationale and Number of People Affected

Food security exists when all people at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (World Food Summit, Rome, 1996). In Canada, the condition of food security implies that such food is accessible in a manner that maintains human dignity (Canadian Dietetic Association, 1991). While food security has always been with us, since the early 1980's there is evidence of a growing number of people in Saskatchewan who suffer from hunger and food insecurity.

Poverty, a major determinant of food insecurity and subsequent poor health, is alarmingly high especially among families with young children (Health Canada, 1999). According to the recently released Innocenti Report Card #1, Canada ranks 17th in terms of child poverty out of the 23 nations belonging to the Organization for Economic Co-operation and Development (OECD; United Nations Children's Fund, 2000). Nutritional vulnerability related to poverty is more prevalent within subgroups of the population including Aboriginal people, high risk pregnant women, single mothers, low birth weight babies and children. In 1993, the Canadian poverty rate among families with children under seven was 23.7%; in Saskatchewan it was 27.2% (the highest in the country). The Canadian and Saskatchewan rates among female lone parent families with children under seven was 75.6% (Canadian Council on Social Development, 1993).

For the majority of infants, breastfeeding is the most important guarantee of food security, ensuring a safe, secure and optimal source of nutrition for our most vulnerable population. Unfortunately, among those of lower socio-economic status, the incidence of low birth weights is higher and the rate of breastfeeding initiation is lower than in the general population (Joint Steering Committee, 1996). In addition, the substantive cost of formula to feed infants who are not receiving breast milk results in less money available for a better diet for the rest of the family. The impact of exclusive breastfeeding in terms of healthcare cost savings and prevention of infant and childhood disease (infant diarrhea, respiratory syncytial virus and otitis media) is substantive (Riordan, J. 1997). This is true in relatively well-off countries such as Canada, not only developing countries.

The use of food banks has risen dramatically since the eighties in an attempt to meet food needs. Once seen as a temporary system of food relief, food banks now provide charitable support to growing numbers. In 1995, about 900,000 children received food from one of approximately 460 food banks across the country (Canadian Dietetic Association, 1996). According to the Canadian Association of Food Banks (1999), children represent 40.8% of food bank recipients. Saskatchewan is one of two provinces with the highest proportion of children using food banks at 48%. A variety of other initiatives including collective kitchens, community gardens, food buying clubs, good food boxes and school-based breakfast and lunch programs have also emerged. In 1996-97, 6.4% of Canadian households, including families with children, reported running out of money to buy food on at least one occasion in the previous 12 months (Health Canada, 1996-1997). The department of Social Services estimates that over 40% of those on social assistance are using food money to pay the rent.

Other issues important to food security in Saskatchewan relate to the rural, agricultural and isolated northern circumstances. The current global economic situations and trade agreements impact the production of safe and nutritious food for all and may well have long term effects on both national and international food security. (Agriculture and Agri-Food Canada, 1998). Increasing economic pressures and migration to the cities often leaves rural communities with little choice in local grocery stores. The costs

of transporting food to remote northern Saskatchewan means that the selection on nutritious foods is limited.

Seriousness/Impact on Population

Food insecurity and hunger can have a significant impact on the nutritional health of the population. There are increased mortality and morbidity rates regardless of age, sex, race or place of residence. There are increased rates of at-risk birth weight, which in turn affects infant mortality and infant morbidity rates. Breastfeeding, another food security issue, reduces the risk of hospitalizations due to respiratory infections, diarrhea, eczema, etc. Food security is also linked to school performance and later employment opportunities.

Modifiable Risk Factors

Each factor listed below affects the risk of hunger and food insecurity. Some suggested modifications to each factor are briefly described.

- **Education** affects employment and can be a factor in skill development to select and prepare nutritious, economical meals
- **Income** must be adequate for basic nutrition, housing and clothing needs
- **Family Supports** such as childcare, clothing and transportation are linked to education and workplace reentry
- Community-based food **policies** and practices, social expenditure and family-friendly workplace policies and progressive tax polices and legislation can protect the nutritional health of families and communities
- **Sustainability** requires developing opportunities for employment within a given location, including finding economically and environmentally sustainable ways to support local food production as well as other important resources
- **Access to a safe, sufficient, nutritious and a personally acceptable food supply for all** includes promotion, protection and support for breastfeeding. Health and education measures are important for the nutritional security of mothers and infants

Evidence-based Strategies

Community and family food security is a complex issue requiring involvement of community members and many partners in the analysis of need, program development, implementation and evaluation. Approaches which are culturally sensitive, holistic, accessible, empowering and, above all, consultative and collaborative are required. Some examples include:

- **Canada's Action Plan on Food Security:** The Action Plan (1998) represents Canada's response to the World Food Summit commitment made by the international community to reduce by half the number of undernourished people no later than the year 2015. Priorities include the right to food, reduction of poverty, promotion of access to safe and nutritious food, food safety especially from environmental contamination of traditional food in the North, the importance of traditional food acquisition among Aboriginal communities, food production, environmentally sustainable practices, fair trade, peace and a monitoring system for food security (Agriculture and Agri-Food, 1998).
- **Breastfeeding support:** The World Health Organization (WHO), the United Nations Children's Fund (UNICEF), the Paediatric Societies in North America and the Breastfeeding Committee for Canada, recognize breastfeeding as the normal and optimal method of infant nutrition. One way to address this

issue is through the Baby Friendly Initiative, particularly the documents which focus on creating baby friendly communities.

- **Implementation of Screening:** Evidence-based nutrition and growth standards for Saskatchewan infants and children have been recently revised. (Public Health Nutritionists' of Saskatchewan Working Group, 1999). Their purpose is to ensure that all families in Saskatchewan have the basic information and resources they need to provide their infants with optimal nutrition for growth and development.
- **Balancing Work and Family:** More families have trouble balancing their work and family responsibilities. Mothers need the support of adequate maternity legislation, consistent access to prenatal nutrition programs, supportive environments and programs for breastfeeding, access to affordable childcare and family-friendly workplaces.
- **School Feeding Programs:** School feeding programs were implemented to improve nutritional status and enhance school performance. More research is needed, however, to determine whether these programs are meeting intended objectives (Papamandjaris, A., 2000; Hyndman, B., 2000). Best practices are being developed in order to reduce the risk of stigmatizing children and families who participate.
- **Community-based Food Assistance and Self-help Food /Nutrition Programs:**
  Poverty is a root cause of most hunger. In Canada, the *poverty problem* is being defined as a *food problem* leading to the emergence of food-based programs. For example, food assistance programs (food banks, charitable food programs, school-feeding programs) and self-help initiatives (community kitchens, community gardens, food buying clubs) allow communities to respond more readily to community needs. These programs can be seen as positive ways in which communities can assume greater responsibility for the well being of their members and mobilize resources to resolve food problems of the poor including promotion of greater self-sufficiency. Current emphasis on communities identifying the needs of their vulnerable groups and how best to respond to them does not, however, eliminate the need for implementation of national and/or provincial standards. In addition current supports are contingent on program availability and eligibility - a hit and miss approach. While these programs may help individuals, there is a need to examine more fundamental issues such as the growing inequality between the rich and the poor.
- **Other Community-based Food Initiatives:** In order to offer more high quality, affordable food to supplement other food purchases or food assistance programs, *Good Food Box* projects are being organized in many areas. Participants purchase a box of nutritious food at cost. In addition to distributing food at low cost, this program enables groups and individuals working in many areas of the community to collaborate on longer-term strategies for change. The effectiveness of these relatively new programs have not yet been evaluated.
- **Public Policies Which Impact on the Health of All Children and Families Versus Only Needy or Targeted Children and Families:** The goal of the National Children's Agenda (NCA) which was developed in 1997 is to create a strategy that enhances the well being of all Canadian children and their families, not only the poorest. This approach is somewhat different than earlier strategies that target support to the needy especially through the tax system. While the NCA does not include a standardized system of uniform policies and programs in every province, it implies that Canadians have reasonable access to programs of comparable quality regardless of where they live. For example, rural communities might require greater coordination and planning of services to make them accessible to everyone, or possibly more decentralized delivery than would be needed in larger centres.
- **Policies Related to the Broader Determinants of Health:** Phillips and Echenberg (2000) envision a basket that includes the broader aspects that impact child well being including a healthy environment, a dynamic job-market, required training opportunities, access to affordable, safe, and healthy housing. This will require broad intersectoral work to address the determinants and develop healthy public policy.
- **Formation of Community Partnerships, Coalitions for Child Health:** In recent years the Government of Saskatchewan has undertaken a number of key initiatives that encourage closer and

more effective working relationships with communities. These initiatives aim to address the broader social and economic challenges facing communities and families, to manage change and to reduce fragmentation of more traditional delivery systems. Examples are *Saskatchewan's Action Plan for Children* and Regional Intersectoral Committees.

- **Food Security Research Gaps:** There are many research gaps including a paucity of information about the food security issues of families with young children under five years in Canada (Joint Steering Committee, 1996). To address this question, a two-year qualitative research project funded by Health Services Utilization Commission (HSURC) is currently underway by Public Health Services, Regina Health District in partnership with the College of Pharmacy and Nutrition, University of Saskatchewan.

Consequences of Not Responding

- Increased infant mortality and morbidity
- Increased maternal and child avoidable hospitalizations
- Increased child poverty rates
- Increased food insecurity among families with young children
- Increased food bank use
- Decreased initiation and duration of breastfeeding.

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5. To decrease the number of people experiencing mental, physical, emotional or sexual abuse, particularly children.

Objectives	Indicator	Evidence-based Strategies
• By ____, the health district will determine the needs of children and their families in the district. • By _____, the health district will determine the resources currently available to children and families. • By _____, the health district will have formed partnerships with other community agencies and services to identify, develop, maintain, and improve supports to families in their communities. • By ____, the health district will have identified the local issues that impact on rates of child abuse and means of monitoring incidence and trends. • By ___, parents' programs, groups, or resources will be accessible for all parents in the district. • By ____, the district will have identified health education programs targeted at preventing child abuse.	• Issues affecting young children and their families are clearly identified in any district health needs studies • An inventory of parent support programs is developed • Community partnerships are identified with common plans of actions to address the issues around child abuse and support to parents • Rates of deaths of children due to abuse and neglect. • Rates of admission of children to hospital for injuries caused by parents and caregivers • Number of cases of suspected abuse reported. • Enrolment by local parents in parenting groups and programs • Number of families borrowing books, videos, toys, etc. from lending libraries	• Professionally led parent groups have positive impact on the interaction between parent and child • Group programs are more cost-effective than individual family training programs • Some at-risk groups can be identified (e.g., male caregivers are more likely to shake babies) and intervention programs can be targeted to them • Linking families to community supports (e.g., faith communities, mentoring families, parenting resource centres) can have positive impact • Parenting "hotlines" can link parents to needed resources

SEE ALSO Safe Environments/Communities section on prevention of Violence for other age groups

Key Partners

Health (many sectors such as Public Health, mental health, paediatrics), Education, Social Services, Justice, community-based organizations

Rationale

"Children require a safe and nurturing environment for optimal physical, emotional and social development. Information on child welfare can be used to monitor the provision of services, outcomes of

service delivery (e.g., recurrences of maltreatment; major or minor physical injury), and the opportunities that may exist for collaborative action among child protection workers and health professionals."

Number of People Affected

The Canadian Incidence Study of Reported Child Abuse and Neglect (CIS), initiated by Child Maltreatment Division of Health Canada, began in 1998 and is to provide national estimates on the incidence of child abuse and neglect. This data may or may not be helpful at the provincial or health district level. Work with regional staff of the Department of Social Services to look at local rates of apprehension of children; number of foster home placements; reports, investigations, and confirmation of cases of abuse/neglect; etc. may yield more useful data. There are some issues regarding confidentiality of records, etc. that need to be addressed before such data is shared.

At a workshop for Saskatoon District Health – Public Health Services staff in Saskatoon on April 3, 2000, Dr. Anne McKenna reported that in 1999, 240 children who had been abused were seen at Royal University Hospital (151 girls, 89 boys). She also reported that during the 10-year period from 1985 to 1995, 20 children seen at Royal University Hospital (RUH) were diagnosed with Shaken Baby Syndrome. It is speculated that more children were also injured or killed by being shaken but that Shaken Baby Syndrome may not have been identified as the cause of death.

Seriousness/Impact on Population

Early experience of babies and young children have decisive and long-lasting effects on how they will develop and learn, how they will cope with stress and how they will regulate their own emotion. Children who have been victims of child maltreatment (i.e., abuse and/or neglect) are at increased risk for:

- Violent behaviour
- Neuropsychiatric disorders
- Substance abuse
- accidental injury
- teenage pregnancy
- anti-social behaviour, including violent and criminal acts
- poor school performance
- becoming perpetrators of abuse (e.g. abusive parents)
- becoming victims of further abuse
- unemployment, unproductive adulthood

Modifiable Risk Factors

- Low income families may have less access to parent support and child development programs. Provision of transportation and child care can enhance the participation in programs for higher risk groups.
- "A parent who has low self-esteem, lacks parenting skills, lives in poverty and lacks family support is more likely to mistreat children than a parent who is confident, has received parent education and adequate resources and support." (*Our Promise to our Children* Canadian Institute of Child Health, 1997) Programs which offer education and/or mentoring may help modify these factors.

Evidence-based Strategies

- The Successful Mothers Support Program (SMSP) is a home visiting mentoring program designed to assist parents who, due to a variety of factors such as young age, low income level, single parent status, disabilities, or minimal social support, may lack some of the resources necessary to foster the healthy physical, psychological and social development of their pre-school age children. It operates in 12 program areas in the province and matches target mothers with mentor mothers or paraprofessional support workers. The "Third Year Outcome Evaluation" reported in 1999 that client families showed improvement in 12 of 13 indicators established for the program. The most marked changes were in social support, stimulation of the child, and discipline of the child. A similar program in Saskatoon links higher needs families with mentor families.
- "Data from the National Longitudinal Survey of Children and Youth showed that positive parenting practices, which included positive interactions and consistent supervision, help children get along with others. Positive parenting practices make a real difference, especially in families where there are challenges and difficulties for children. According to researcher Sarah Landy and Kwok Kam Tam of the Growing Together Project sponsored by the Hincks Centre for Children and Adolescents and the City of Toronto's Public Health Department, 'Children in at-risk situation who enjoyed positive parenting practices achieved scores within the average range for children in Canada. Sometimes their outcomes even surpassed those of children who were living in more favourable socio-demographic conditions but who were exposed to less positive parenting practices or to more hostile/ineffective parenting.' " (from "Our Promise to Our Children").
- The provision of parental education and support services when a baby is born and for the months or years afterwards has been shown to significantly reduce the risk of child maltreatment, improve health outcomes, reduce juvenile delinquency, reduce the risk of accidental injury, increase spacing between births and improve school performance and productivity levels in later life. Such prevention programs are a more cost-effective investment than is managing the consequences of poor childhood outcomes through welfare, unemployment and the correctional, education, and health systems. Early intervention programs such as the *Hawaii Healthy Start Program*, and *Babies Best Start* and *Better Beginnings, Better Futures* in Ontario have been or are being evaluated and are showing positive impact.
- There are few randomized, controlled studies which measure the effectiveness or impact of parenting programs: however, anecdotal reports, and our understanding of the theory of health education and health promotion support the approaches of many parenting programs.

Does Public Health Have to Respond

Children are protected from abuse under the law and the reporting of any suspected case of abuse is required of all citizens.

Public Health Nurses and other public health staff are often ideally placed to be observers of parent-child interaction and to identify warning signs. This can trigger referral for preventive/educational services or intervention by child welfare agencies. In some jurisdictions, PHNs do formal screening of families of newborns for identified risk factors with follow-up evaluations in the home for those families who fail the screen. Home visiting occurs in most jurisdictions to a greater or lesser degree. In some parts of Saskatchewan and Canada, PHNs provide support to lay mentors or home visitors who work directly with targeted families.

The role of public health programs and personnel in providing child abuse prevention/ parenting support in a community may well vary depending on the community's needs and resources available. At the very

least, public health agencies have an obligation to ensure that their staff are well informed on the topic of child abuse, that systems are in place to facilitate the reporting of suspected cases, and that referral to available community resources is offered to all parents wishing or needing to enhance their parenting skills. Public health also has a strong mandate to advocate for the enhancement of child development as one of the determinants of life-long health. This could include monitoring the health of children, educating the public on the needs and services for children and youth, and promoting positive, preventive health practices to give all children the healthiest possible start in life.

Consequence of Not Responding

If the abuse of children continues, these children will continue to be burdened with the consequences listed above (under "Impact of the Problem"). The cycle of violence will continue for another generation. The costs to the social welfare, health, education, and justice systems will continue and, potentially, increase.

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6. To decrease the incidence of youth engaged in risk behaviours.

Objectives	Indicator	Evidence-based Strategies
• By __ the incidence of motor vehicle injuries among youth will be reduced to _____.	• incidence of vehicular injuries of youth aged 19 and under	• programs that provide youth with opportunities for developing life skills and knowledge: - use of media - train the trainer - peer education - peer support groups - experiential learning - mentoring • advocacy with schools, community agencies and community leaders to establish the concept of youth participation and infrastructures to give youth a voice in decisions affecting their health. • facilitate community partnerships and participation to identify the need for and development of community based programs • healthy public policies that impact on youth health in school, workplace, municipalities e.g.: availability of safe transportation, food policies, smoking by-laws • increase in life skills – decision making, communication, assertiveness, communication, resisting peer pressure, critical analysis, stress management, conflict resolution. • intersectoral partnerships to address the needs of youth – food access initiatives, community recreation, housing • youth participating in community activities and decision making bodies that impact on them and their families e.g.: town councils, school boards, health boards, faith communities • increase in knowledge of youth about factors that affect their health e.g.: nutrition, tobacco, drug use • increase capacity of community
• By __ reduce the initiation of cigarette smoking by youth so that no more than ___ per 1000 are regular cigarette smokers by age 20.	• % initiating of cigarette smoking	
• By __ reduce smokeless tobacco used by males age 12-24 to an incidence of no more than ___ per 1000	• % using smokeless tobacco	
• By __ reduce the proportion of youth who have used marijuana and cocaine more than 12 times in the last year.	• % using marijuana or cocaine more than 12 times per year.	
• By __ reduce the proportion of high school students engaged in recent occasions of unhealthy drinking (5 drinks or more per week)to ___%	• % of students drinking 5 drinks per week or more	
• By ___ reduce the proportion of high school students who report driving a vehicle after drinking any alcohol	• % of students driving after consuming alcohol	
• By __ increase the number of schools with policies re: smoking, healthy eating choices, etc.	• # and type of policy	
• By __ increase the number of youth participating in decision making bodies in their community	• # of youth and name of decision making body.	

		to support youth participation in their own health promotion and acquisition of life skills • schools that support the health of youth through policies, curriculum, a healthy school environment • enhanced access to appropriate community facilities and services to meet the needs of youth e.g.: recreation, teen wellness centres • increased positive community attitude to youth and youth participation.

Key Partners

Health, Education, Social Services, Justice, youth, community organizations and members, parents

Key Program Links

See also substance abuse prevention, physical activity promotion, teen pregnancy

Rationale

" Risk behaviours (smoking, drug use, unsafe sex, alcohol) generally emerge during adolescence and have important implications for both the immediate and future health of young people. While most youth experiment with at least one potentially high-risk behaviour, a minority engage in several." *(Towards a Healthy Future, 1999, p. 128)*

Number of People Affected

The 1994-95 National Population Health Survey identified multiple risk behaviours by youth aged 15-24 focused on smoking, binge drinking, sex with multiple partners and sex without a condom. Males were more likely than females to engage in multiple risk behaviour.

Gender	*no risk behaviour(RB)*	*1 RB*	*2 RB*	*3-4 RB*
Male	32%	26%	24%	19%
Females	39%	28%	19%	14%

The most common two-risk combination for both sexes was smoking and binge drinking. However, among males, almost as many reported combination of binge drinking and unsafe sex." (Towards a Healthy Future, 1999, p. 128)

% of teens using alcohol once a week or more: (Youth Speak Out, 1999)

≤ 13 years	14-15 yrs	16-17 yrs	>17 yrs
21.3	42.2	58.8	65.6

% of teens using marijuana over 12 times per year: (Youth Speak Out, 1999)

≤ 13 years	14-15 yrs	16-17 yrs	>17 yrs
11.6	24.2	33.7	37.6

% of teen using smoking tobacco every week: (Youth Speak Out, 1999)

≤ 13 years	14-15 yrs	16-17 yrs	>17 yrs
22.1	43.8	42.7	60.1

Seriousness/Impact on Population

- Overall health status: an increase in substance use among adolescents may be indicative of a general decline in the health status of the population
- Mortality due to lung disease: tobacco has been proven to cause lung cancer and other cancers. An increase in tobacco use and early onset of use may impact on mortality rates
- Low birth weight: substance abuse during pregnancy increases the risk of delivering a low birth weight baby. These babies are at risk of perinatal and neonatal death and long term heath and developmental problems
- Fetal Alcohol Syndrome (FAS): substance use during pregnancy increases the risk of delivering a baby with FAS or FAE
- Intentional and unintentional injuries: alcohol and drug use is associated with an increased risk for injury, violence and suicide
- Communicable Disease: the use of intravenous drugs increases the risk of spreading HIV, infectious diseases and hepatitis
- Teenage pregnancy and sexually transmitted disease: risk-taking behaviour, including engaging in unsafe sex, increases with substance abuse

Modifiable Risk Factors

- Socio-economic status: the use of tobacco, alcohol and illicit drugs tends to increase as income and education levels decrease
- Attitudes and actions of peers and family members (support systems): friends, family members and other caregivers have a significant influence on the behaviours of youth with respect to substance abuse
- Child abuse or neglect: abused or neglected children are more likely to abuse alcohol and tobacco.
- School environments: the educational environment generally assumes a protective function. School policies towards smoking and the types of information sessions provided can help deter or delay the onset of substance abuse
- Personal coping skills: this includes self-esteem, connection to society or feeling no alienation

Evidence-based Strategies

- Restricting sales to minors through legislation, regulation or increased pricing or taxes
- School based programming to educate students about the dangers and ways to resist peer pressure and make good decisions
- Developing multi-faceted approaches that are community based, prevention focused
- ***The Addiction Research Foundation*** (see web site reference) identifies the key to dealing with adolescent alcohol and other substance use is prevention, which should begin in early childhood and

continue throughout adolescence. Prevention programs can be school, family or community based. The information-only and "scare tactic" approaches of the past are now considered ineffective (Tobler, 1992). The mass media approach, although information oriented, is useful in increasing public awareness and putting an issue on the social agenda (Smart, 1993). Current programs tend to be more psychosocial in approach, addressing social, cognitive, biological, attitudinal and developmental factors aimed at building skills within a supportive group context (Tobler 1992). School-based programs have the advantage of being able to use age-specific strategies in a learning environment. Tobler reports that highly structured programs are appropriate for younger ages and small group discussions lead by mental health professionals for high school seniors. For 6th to 8th graders, most effective are programs stressing acquisition of refusal skills and broad-spectrum skills such as social skills, coping skills and problem solving skills. Parenting programs have either not been evaluated or have shown disappointing results (Smart, 1993) and those so far tend to be directed at middle-class parents. Community approaches depend on a coordinated effort on behalf of the public and private agencies and other groups within the community. Possible community strategies are recreational alternatives for youth and community mobilization (Klitzner et al.,1993). In addition to prevention programs geared to the average teen, strategies and programs are also being tailored to high-risk groups. The Center for Substance Abuse Prevention (CSAP) has summarized promising strategies and programs based on the following categories of risk factors: individual-based, family-based, school-based, peer group-based and community-based. Some examples are mentoring programs, family skills training, drug-free youth groups in public housing sites, and community cultural enhancement programs (CSAP, 1993).

- Successful youth develop programs (Florida Tobacco Clearinghouse) have:
  - a comprehensive strategy with clear mission and goals
  - committed, caring, professional leadership,
  - youth-centred activities in youth accessible facilities
  - culturally competent and diverse programs
  - youth ownership and involvement
  - a positive focus including all youth
- Programs that are effective have 4 overarching characteristics:
  - they respond to the needs and interests of youth
  - they are integrated into a comprehensive prevention program, reinforce its lessons and seek to address the specific factors that influence drug use
  - they promote the positive development and resilience of youth by enhancing their competence, sense of autonomy and purpose
  - they extend the reach of prevention efforts to youth who are at high risk or who have already tried using alcohol or drugs, and they reach out to families and communities

Consequence of not responding

- Increased injuries
- Increased addictions

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Web Sites

Substance abuse

http://www.cdc.gov/tobacco/research_data/stat_nat_data/bestprac-execsummay.htm

http://www.ccsa.ca/topics.htm

http://www.arf.org/isd/infopak/youth.html (Addiction Research Foundation, includes Tobler reference)

http://www.ftcc.fsu.edu/

Youth Participation

http://www.ayf.org.au/resources/participation/ythpart.htm

http://www.iyfnet.org/document.cfm/23/general/71

http://www.hc-sc.gc.ca/hppb/childhood-youth/

Comprehensive School Health

http://www.go.com/?win=_search&sv=M6&qt=%22comprehensive+school+health%22&oq=&url=http%3A//www.health.state.ri.us/disprev/hshk/compon.htm&ti=Components+of+Comprehensive+School+Health&top=670

7. To promote healthy sexuality and decrease the rate of teen pregnancy.

Objectives	Indicator	Evidence-based Strategies
• By ___ reduce the pregnancies among young women under 19 to no more than ___ per 1000. • By ___ increase to ___% the proportion of sexually active, single people aged 19 or younger using a condom at last sexual intercourse. • By ___ reduce date rape, attempted rape (dating violence) of young women under 19 to ___ per 1000. • By ___ increase the % of adolescents aged under 19 who report having ___ sexual partners over the last 6 months • By ___ increase the age of initiation of sexual activity among adolescents under 19. • By ___, increase the number of schools that teach sexual health curriculum regularly to a wide range of grades.	• teen pregnancy rate • % using a condom at last sexual intercourse • incidence of rape or attempted rape • number of partners over a 6 month period • reported ages of initiation of sexual activity • number of schools teaching sexual health curriculum on a regular basis	• programs that provide youth with opportunities for developing life skills, healthy relationships and knowledge: - use of media - train the trainer - peer education - peer support groups - experiential learning - mentoring • advocacy with schools, community agencies and community leaders to establish the concept of youth participation and infrastructures to give youth a voice in decisions affecting their health • increase in life skills – decision making, communication, assertiveness, resisting peer pressure, critical analysis, stress management, creating and maintaining healthy relationships, and conflict resolution • intersectoral partnerships to address the needs of youth access to confidential birth control • increase knowledge of youth about factors that affect healthy sexuality and healthy relationships • increase capacity of community to support youth participation in their own health promotion and acquisition of life skills • schools that support the sexual health of youth through policies, sexual health curriculum that is regularly taught, a healthy school environment • enhanced access to appropriate community facilities and services to meet the needs of youth e.g. recreation, teen wellness centres

Key Partners

Health, Social Services, Education, Youth, Parents, Community

Key Program Links

See also Sexually Transmitted Disease

Rationale

Sexual health is an essential aspect of overall health and well being across the entire life span. There are significant issues and challenges that indicate we have some way to go to achieving it in the province. These include teen pregnancy rates, large numbers of young people with sexually transmitted disease, dating violence, etc. The cost of these problems is high for both individuals and for society in social, economic and educational terms.

Number of People Affected

- in 1997, 1,974 pregnancies to females 10 – 19:
  - 70.1% resulted in live births (1,383 which is 10.9 % of all live births)
  - 33 were to females under 15 years
- provincial adolescent pregnancy rates significantly higher than the Canadian rate. Saskatchewan Health's Maternal and Infant Health Indicators on adolescent pregnancy compare the 1993 Saskatchewan rate of 57.9 for women 15-19 with the Canadian rate of 47.8 for the same year. In 1997, this rate was 50.7; the Canadian rate for this year is not available.

Seriousness/Impact on Population

Adolescent pregnancy rate may have an impact on: (Saskatchewan Health, 2000)

- child poverty: adolescent mothers are more likely to be single mothers and to be unemployed or employed in low-wage positions
- Low birth weight: due to lack of timely or continuous prenatal care, prenatal nutritional inadequacies and/or substance abuse during pregnancy
- Infant mortality: low birth weight is a primary contributing factor for infant deaths
- Child development: low birth weight (LBW) children are more likely to exhibit developmental problems. Some teen mothers lack the skills and resources necessary to provide a stimulating experience for their children. Teen mothers may experience difficulty in accessing the health system and the social support systems necessary to obtain needed resources.

Modifiable Risk Factors

The following factors contribute to directly or indirectly to the rates of teen pregnancy: (Saskatchewan Health, 2000)

- Unprotected sexual activity
- Frequency of sexual activity
- Lack of knowledge of consequences of sexual activity

- Substance abuse – alcohol and other substances impair judgement and reduce one's inhibitions to engage in sexual activity.
- Availability of and access to contraceptive methods and information
- Personal values, beliefs, and attitudes concerning the value, morality and effectiveness of contraceptive methods
- Personal values, beliefs and attitudes concerning sex
- Sexual attitudes and beliefs of peers and role models
- Personal aspirations

Evidence-based Strategies

- *Youth Speak Out (1999)* and *Youth Roundtable Discussions (1999)* both identify sexual health information as key. Teachers, parents and medical professions are the preferred source for information, but the most normal route is via peers. The roundtable discussions identified, from a youth perspective, many strategies that could be used to increase awareness of sexual health issues.
- *Towards a Healthy Future (1999)* identifies that youth were critical of the nature and timing of their courses in sexual education. Many wanted a broader approach that would include exploration of issues such as love, positive aspects of sexuality and sexual preference. Youth in small communities expressed concerns about access to condoms and the lack of privacy and confidentiality in their environment.
- *Canadian Guidelines for Sexual Health Education (1995)* agree that sex education along with increased access to sexual health clinics is associated with significant declines in teen pregnancy rate and a delay of first intercourse
- Successful sexual health promotion efforts where significant improvements resulted indicate the conditions which foster declining teen pregnancy rates (*Just Loosen Up and Start Talking*, Nova Scotia Dept. of Health, 1996) :
    - positive youth focus, and an attempt to respond to youth needs rather than adult limitations
    - opportunities for peer discussion and support for the development and clarification of values and attitudes; removal of gender or other status inequalities and promotion of attitudes against exploitation
    - acceptance and comfort with sexuality and individual choice
    - mandated, systematic sexual health education that promotes mutuality and informed, responsible decision making, along with accessible, local sexual health clinic services
    - community and intersectoral collaboration that reinforces a positive, problem prevention message
    - outreach to those with special needs or in crisis; and
    - healthy public policy that is developed into guidelines, mandated and supported (with budgets, staff training and administrative supports) and that is evaluated with client input.

Consequence of not responding

- Increased teen pregnancy rates
- Increased Sexually Transmitted Infections

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Web Sites

http://www.agi-usa.org/sections/teen_preg.html

www.teenpregnancy.org

Meeting the Needs of Young Clients: A Guide to Providing Reproductive Health Services to Adolescents Table of Contents ..online at http://www.fhi.org/en/fp/fpother/adolhand/adolchap1.html

8. To decrease social isolation in seniors.

Objectives	Indicators	Evidence–based Strategies
• By _____ increase to at least ____ percent the proportion of people aged 65 and older who had the opportunity to participate during the preceding year in at least one organized health promotion program through a community-based setting that serves older adults	Existence of programs	Ingredients for successful community development or health promotion: • Local groups with well developed problem-solving skills and the spirit of self-reliance • A broad distribution of power in decision-making, commitment to the community as a place to live, and broad participation in community affairs; • Leaders with a community-wide vision and residents with a strong sense of community loyalty • Effective collaboration in defining community needs and the ability to achieve a working consensus on goals and priorities; • Citizens with a broad repertoire of problem-solving abilities who know how to acquire resources when faced with adversity; • Commitments to the community, and a government that provides enabling support for the people; • A formal or informal mechanism for exchange among conflicting groups • Also, a form of community-wide organization where citizens volunteer their time , not only to participate in leadership activities but also to develop leadership skills • Advocacy • Empowerment • Social support programs • Self-help programs • Comprehensive health promotion which may include Informational programs such as *Discover Choices* • Visiting programs such as Little Brothers • Partnering programs between older adults and school children • Adopt a grandparent contact programs • Wheels to meals • Pot-luck, bring an older adult friend
• By _____ increase to at least ____ percent the proportion of providers of primary care for older adults who routinely evaluate people aged 65 and older for social isolation.	Percent of people evaluated	
• By ____ the community will be served by a variety of client advocacy services for elderly and dependent persons, their families, and other support persons	Presence of advocacy services	

Key Partners

Health, Social Services, Seniors Groups, Families

Rationale

People are not aging the way they used to.
With higher education seniors may have:

- better knowledge of community and government programs and services
- be more open to health promotion messages
- be more inclined to participate in educational, political and voluntary activities, and
- be more likely to demand their rights[1]

Number of People Affected

"With people living longer and families having proportionally fewer children, seniors' larger share of the population – eventually reaching one-quarter of all Canadians – will remain for the foreseeable future."[1] The following chart outlines future trends for Canadians 65 years and over..

Year	Number	Population Share
1998	3.7 million	12.3%
2016	5.9 million	15.9%
2021	6.9 million	17.8%
2041	9.7 million	22.6%

"There is both theoretical and empirical support for the notion that social support and social ties positively influence health in old age. There is also evidence that social support protects individuals from the negative effects of highly stressful situations such as serious illness, and these ties also promote the health of individuals when they are not undergoing stress."[1]
"Positive effects of interaction are more apparent for women than men (Antonucci 1990) and vary from one subculture to another (Driedger and Chappell 1987)."[1]

Distribution of Close Family Members and Friends, By Age, Sex and Living Arrangements, Percentages, 1991 Source: Survey on Aging and Independence, 1991

	FEMALES			MALES		
	55-65	65-74	75+	55-65	65-74	75+
NUMBER OF CLOSE FAMILY MEMBERS	Not alone (%)					
0	5.0	9.3	8.2	9.7	12.2	13.9
1	18.2	20.2	26.5	19.7	19.4	21.7
2-3	31.0	32.0	32.4	29.5	28.9	32.2
4+	45.8	38.5	32.9	41.0	39.5	32.2
			Alone (%)			
0	16.0	7.7	14.0	25.0	23.5	21.2
1	21.3	25.9	25.3	25.8	23.4	25.4
2-3	32.6	35.9	33.7	23.6	30.5	33.4
4+	30.1	30.5	27.0	25.6	22.7	19.9
NUMBER OF CLOSE FRIENDS			Not alone (%)			
0	21.9	27.1	36.1	26.9	31.2	37.6
1	12.6	14.9	12.7	9.0	8.7	9.6
2-3	35.9	32.0	30.1	30.7	23.3	20.1
4+	29.6	26.0	21.1	33.4	36.8	32.6
			Alone (%)			
0	21.0	20.3	29.5	33.6	28.7	36.4
1	17.1	16.7	16.3	9.3	13.2	15.6
2-3	34.5	31.6	24.8	27.6	31.2	21.6
4+	27.4	31.4	29.5	29.5	26.9	26.4

Distribution of the Proximity to Closest Family Member and Friend, By Age, Sex and Living Arrangements, Percentages, 1991 Source: Survey on Aging and Independence, 1991

	FEMALES			MALES		
	55-65	65-74	75+	55-65	65-74	75+
PROXIMITY OF CLOSEST FAMILY MEMBERS			Not alone (%)			
None	5.0	9.3	8.2	9.8	12.2	13.9
Same Household	44.7	42.7	50.4	56.9	50.8	46.9
Same Neighbourhood	10.3	10.6	9.1	5.8	6.1	8.3
Same City or Town	19.3	19.0	15.9	13.5	16.3	15.2
Different City or Town	20.6	18.3	16.4	13.9	14.6	15.6
			Alone (%)			
None	16.0	7.7	14.0	25.0	23.5	21.2
Same Household	0.8	0.7	0.8	2.0	1.0	2.1
Same Neighbourhood	11.8	18.9	19.4	13.6	14.5	20.3
Same City or Town	34.2	35.3	33.8	30.7	28.4	29.2
Different City or Town	37.1	37.4	31.9	28.6	32.6	27.2
PROXIMITY OF CLOSEST FRIEND			Not alone (%)			
None	22.0	27.1	36.1	27.1	31.4	37.7
Same Household	0.6	1.2	2.2	1.0	2.0	2.1
Same Neighbourhood	25.2	27.7	26.5	23.1	25.6	25.7
Same City or Town	36.1	28.4	26.5	32.3	30.1	27.0
Different City or Town	16.0	15.6	8.6	16.5	11.0	7.5
			Alone (%)			
None	21.0	20.3	29.5	33.6	28.7	36.4
Same Household	0.5	0.9	2.2	0.7	1.1	1.0
Same Neighbourhood	25.3	36.5	34.3	21.7	27.5	35.8
Same City or Town	35.6	30.0	28.3	32.0	329.0	21.1
Different City or Town	17.7	12.2	5.7	11.9	13.6	5.6

Seriousness/Impact on Population

Based on the responses to the 1994–95 National Population Health Survey, Statistics Canada recently combined a number of indicators (social participation, contacts with friends, relatives and neighbours, and perceived social support) to determine which groups of Canadians were at risk for social isolation. They found that adults over the age of 74 accounted for 74% of those at risk, although they account for only 5% of the population as a whole. Other factors that contribute to a high risk for social isolation included disability, widowhood, having a low level of education, being a newcomer to Canada, and having a background other than French or British.[5,7]
For this reason, some writers consider foreign-born seniors to be victims of double jeopardy. Older ethnic women who are widowed may be at a triple disadvantaged."[6,7]

"Much research has been conducted on the effect of social support in old age...social support is a necessary part of most seniors' lives. Social interaction provides support that contributes to enhancing health."[4]
Social structure has independent effects on health, and it affects the choices individuals make about their health.
As one grows older and more likely to be functionally limited, the availability of family and friends for social support becomes more important. Furthermore, the need for help with the more personal aspects of daily life such as dressing and moving about in the home increases, access to family becomes relatively

more important compared to access to friends (Stone 1993). In particular, the proximity of close family or friends one can turn to for help both increases one's ability to cope with everyday life and often reduces the pressures on formal agencies when the need for social support arises. While these relationships are common, we should not assume that the presence of close family always leads to support, nor that the need for support can always be transferred to the family. The quality of the relationships among family members (Stone 1993), the obligations for care-giving of other family members, particularly grandchildren (Menken 1985), and the individual's own mechanisms for coping (Rosenthal and Gladstone1994) all combine to determining whether the family will be the locus of support.

Modifiable Risk Factors

Data from the Survey of Aging and Independence (above) reveal the relationship between older people and the family members and friends to whom they feel close. What is striking is the frequency with which respondents said that there was either no one or only one person in each of these categories. Among those 75 and over, who tend to be more vulnerable because their rapidly increasing likelihood of disabling conditions, 39.9% of women who live alone and 46.6% of men living alone identified one or no family members to whom they felt close. The numbers were even higher for close friends, with corresponding figures of 45.8% and 52.0%. While those who live with others most often have access to family in the same household, it is noteworthy that 13.9% of men and 8.2% of women 75 and over who lived with others claimed that there was no family member to whom they felt close.
The proximity of friends and family to whom one feels closest provides more insight into the availability of support for older people. As might be expected, family members tend to be more geographically dispersed than networks of friends. Among those who lived alone in 1991, fully one-third of women 75 and over said that their closest family member lived in another town or city; only 5% said the same of their closest friend. The most dramatic responses, again, came from those who live alone. While the likelihood of having a close family member in the same neighbourhood increases with age, among both men and women 75 and over, only 20% had a close family member in the same neighbourhood. While this type of analysis is not definitive, it draws a clear picture about a significant proportion of older people; they live alone and have few resources in their social networks to turn to, in the event that they need support. The implication is that the burden of support for many of these individuals will be carried by formal agencies and, given that a substantial proportion of these people are low income, the prime providers will be public sector agencies.[8 p46-49]

Evidence-based Strategies

- Transportation:
  - Road and highway design features including signage, traffic light timing and curb height, that take into consideration the special needs of people with mobility, visual, hearing and other limitations
  - Assess the competence of older drivers in ways that weigh safety concerns while respecting the dignity and independence of each individual
  - Assess and minimize the negative impact of budget cutbacks to public transportation services on seniors and persons with disabilities
  - Ensure continued improvements to long distance transportation systems for seniors and persons with disabilities
  - Encourage innovative approaches to enhancing transportation in rural areas
- Increasing adapted public housing – suited to people of all ages and varying abilities

- Creating conditions in which health and social services can adjust and respond to the evolving needs of the aging population. For example, institutional care needs to be based on residents' needs rather than on institutional requirements[3]
- Workplace policies that are family-friendly – recognizing that employees have family responsibilities toward children and older parents and family members
- Training and learning for all workers will help refresh motivation, improve skills and support success in working life and in retirement

Who Should Be Involved?

- **Government:**
  - maintaining public pension plan, which is the only guarantee of minimal financial well-being for many
  - reinforcing and encouraging solidarity between individuals, families and generations, e.g. by offering support to informal caregivers and providing financial assistance to community organizations
  - planning to meet the needs of an aging population, e.g. by providing senior friendly public transportation, ensuring appropriate lighting and signage, increasing adapted public housing, encouraging universal design principles and standards
  - creating conditions in which health and social services can adjust to the evolving needs of the aging population
- Community:
  - Real estate developers and architects must ensure that new housing is universal in design – suitable for people of all ages and varying abilities
- Individuals:
  - choosing to stay physically and mentally fit
  - choosing to manage their affairs wisely
  - choosing to stay socially involved

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Chronic Disease Prevention

GOAL AREA: CHRONIC DISEASE PREVENTION

BROAD GOAL: Saskatchewan residents will enjoy healthy lives with low risk of chronic conditions such as cardiovascular disease, cancer, type 2 diabetes, osteoporosis and substance abuse and will have high levels of mental and physical well-being

In order to address the goal area successfully, Health Districts must work on the following issue goals.

ISSUE GOALS:

1. To increase the number of Saskatchewan residents who participate in regular physical activity in sufficient quantity to promote optimal health

2. To reduce tobacco use and the harm it causes in the population of Saskatchewan

3. To promote healthy eating habits that support good nutrition and reduce the incidence of nutrition and obesity related chronic diseases

4. To minimize substance abuse to protect the health, safety and quality of life for all, with special attention to the needs of children

5. To increase the capacities of communities to reduce unhealthy levels of stress and to improve overall happiness of residents.

Health districts may choose from the following sample objectives, indicators and Evidence-based Strategies for each issue goal or develop their own to accommodate local needs and resources. Rationale for each issue goal is also included.

1. To increase the number of Saskatchewan residents who participate in regular physical activity in sufficient quantity to promote optimal health

Objectives	Indicator	Evidence-based Strategies
To increase the physical activity participation rates of adults to levels adequate to achieve optimal health • By ____, reduce the proportion of adults who engage in no leisure-time physical activity to no more than _____% • By ____, increase the proportion of adults who participate daily or nearly daily in moderate physical activity for at least 30 minutes per day to _____% • By ____, increase the proportion of adults who engage in vigorous physical activity 3 or more days per week, for 20 minutes or more per occasion to _____% • By ____, increase the proportion of adults who regularly perform physical activities that enhance and maintain muscular strength and endurance and flexibility to ____%	• Rates of adults reporting no leisure time physical activity • Rates of adults reporting being active at a moderate intensity for 30 minutes daily, or nearly daily • Rates of adults reporting participation in vigorous physical activity • Rates of adults reporting regular participation in activities promoting muscular strength and endurance, and flexibility	• Use an active living and community-based approach to promote physical activity • Raise the importance of physical activity on public agendas • Work with traditional and non-traditional partners with an interest in physical activity to establish and implement strategies • Develop public education campaigns that promote physical activity • Create a speakers' bureau of volunteers to speak to the value of active living and physical activity • Provide individuals who want to become more active with access to appropriate information, programs and support • Analyze and disseminate research findings to support the development and adoption of best practices • Support coalition development at community and provincial levels • Foster local co-operation in the development of low cost, easily accessible, multi-use trails for walking, jogging, and cycling • Identify gaps in existing programs relevant to specific populations • Build capacity of communities by providing training, resources and technical expertise • Promote policies that allow scheduling flexibility for employees who wish to participate in physical activity • Promote policies that increase the number of facilities available, or maximize the use of existing facilities for the purpose of being physically active • Ensure barriers to participation are minimized and/or eliminated • Monitor and evaluate activities and outcomes on an ongoing basis

Objectives	Indicator	Evidence-based Strategies
To increase the physical activity participation rates of children and youth to levels adequate to achieve optimal health: • By ___, increase the proportion of adolescents who engage in moderate physical activity for at least 30 minutes on 5 or more days per week to ___% • By ___ ,increase the proportion of adolescents who engage in vigorous physical activity on 3 or more days per week, for 20 or more minutes per occasion to ___% • By ___, increase the proportion of children and adolescents who participate actively in daily school physical education to ___%	• Rates of adolescents reporting participation in moderate physical activity • Rates of adolescents reporting participation in vigorous physical activity • Rates of adolescents and children regularly participating in daily school physical education	• Involve youth in a range of programs and activities in a variety of settings • Educate parents and caregivers about the importance of physical activity and inform them of physical activity programs in their local communities • Involve youth in the decision-making process for future physical activities, similar to the Youth Empowerment Centres within the Metis Nation of Saskatchewan • Advocate for schools to involve students in daily physical activities • Promote policies that allow for more after-hours use of schools and encourage "free use" of recreational facilities for family or youth during designated hours

Key Partners

It is important that public health be an active partner with the groups that promote and provide physical activity opportunities in the community. Partners may include government agencies such as Municipal Affairs, Justice, Health, and Housing, Education at primary, secondary and post-secondary levels, professional associations of physical activity and health professions and other agencies such as Saskatchewan Active Living Coalition, Saskatchewan Seniors Mechanism, SaskSport, Federation of Saskatchewan Indian Nations, Saskatchewan Metis Sport, Culture, Recreation and Youth Inc., Participaction, etc.

Rationale

Regular participation in physical activity bestows a number of health benefits including decreased risk of premature mortality, coronary heart disease, hypertension, colon cancer and type 2 diabetes mellitus. Regular participation in physical activity also appears to reduce depression and anxiety, improve mood, and enhance ability to perform daily tasks. Other benefits include a reduced risk of back problems, osteoporosis and obesity, decreased absenteeism from work and an improved body image. Furthermore, people classed as optimally fit were much less likely to have visited their physician three or more times during the preceding year, were less likely to have spent a night in hospital in the year preceding the survey, were more likely to rate their health as good or very good, were less likely to be smokers, were half as likely to have excess weight and were five times less likely to be borderline hypertensives.

Number of People Affected

The National Population Health Survey indicates that in 1996/97 only 21% of females and 20% of males in Saskatchewan (ages 12 and over) were classified as sufficiently active during their leisure time to achieve optimal health benefits. This compared with the Canadian average of 18% of females and 24% of males. With similar findings, the 1998 Physical Activity Monitor (Canadian Fitness and Lifestyle Research Institute) reported that as many as 63% of Saskatchewan residents aged 18 and older were insufficiently active for optimal health benefits. While physical activity levels progressively decline with age, even our children are not as active as they should be. Heart and Stroke Foundation reports that a third of Saskatchewan children are not doing even the minimum amount of activity needed to develop cardiovascular fitness, muscle strength and flexibility.

Seriousness/Impact on Population

The diseases associated with physical inactivity carry a huge financial cost. Conversely, encouraging the public to become more active has the potential for saving health care dollars. For example, a 1995 Ontario study calculated that a 1% increase in physical activity participation rates in Ontario would result in direct government health savings of $31 million. The Conference Board of Canada determined that direct treatment costs, including hospital, physicians, drugs and research for ischemic heart disease, type 2 diabetes and colon cancer could be reduced by $11.5 million annually if the number of physically active Canadians could be increased by just 1%.

Of the four primary risk factors for coronary heart disease - high blood pressure, high blood cholesterol, cigarette smoking and physical inactivity - the most prevalent is physical inactivity. In addition, the relative risk of developing coronary heart disease associated with physical inactivity is higher than the risk associated with the other factors. Because of this combination of high prevalence and high disease risk " ...a physical activity strategy could have greater relative impact on Canadians' health than a smoking cessation strategy or a blood cholesterol reduction strategy " (Canadian Fitness and Lifestyle Research Institute).

Modifiable Risk Factors

Physical inactivity is a modifiable risk factor for many chronic diseases. Its prevalence is determined by a number of real or perceived barriers to increased activity. These include, but are not limited to, lack of time, lack of personal motivation, lack of financial resources, lack of facilities, lack of trained leaders, safety issues, lack of knowledge of the benefits, physical limitations and lack of support systems.

Evidence–based Strategies

A national objective to reduce physical inactivity by 10% by the year 2003 (compared with 1997) was set by the Clear Lake Accord. Saskatchewan, in signing that agreement, has assumed a similar objective. The soon-to-be released provincial strategy, A Physically Active Saskatchewan, identifies four broad strategic areas which can serve as a guideline for health districts:

- Education and communication
- Program provision
- Supportive environments
- Research and monitoring

Among children, attitudes toward physical activity, knowledge of its health benefits and enduring personality traits have consistently been found to be weak correlates of physical activity participation. Knowledge of how to be physically active, on the other hand, may be a significant influence, as is

parental support and role modeling. We need to support acquisition of motor skills in children as this is a major factor in continued participation. Parental concerns regarding safety should be recognized (i.e. safe play areas, safety in travelling to and from play areas, and freedom from abuse and harassment in play situations, etc.). Those developing policies and programs must be cognizant of the steady decline in activity levels as children grow older, especially among adolescent girls.

For the adult, a focus needs to be placed on working physical activity into already busy lives. Time, or the lack of it, is a major barrier in this age group. Workplaces should be encouraged to provide supportive environments that promote and encourage physical activity.

Older adults are less likely to recognize the physical benefits of physical activity, and more likely to worry about injury. Safety concerns must be recognized and addressed (e.g. fear of falling, fear of aggravating existing conditions, etc.). Evidence suggests that home-based or combination group and home-based activities have better adherence among older adults than other approaches.

Low-income, racial and ethnic minorities and populations with disabilities are more likely to be sedentary than the general population. Taylor, et al (1998) suggest that two key factors are essential for intervention with these groups; meaningful participation of the community and a thorough assessment of needs, attitudes and unique barriers prior to implementation of the intervention.

In all age groups, people will be at different stages of change. A variety of active living resources and strategies should be developed which are tailored to the individual's stage of change.

Consequences of Not Responding

- Spiraling incidence of chronic disease related to inactivity
- Increased health care costs related to chronic disease
- Increased human cost related to chronic disease

Note: A longer version of the physical activity issue paper is available.

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The Active Living Alliance for Canadians with a Disability http://www.ala.ca
The Active Living Coalition for Older Adults http://www.alcoa.ca/
The Canadian Association for Health, Physical Education, Recreation and Dance http://www.cahperd.ca
The Physical Activity and Health Network http://www.pitt.edu/~pahnet/
The Saskatchewan Parks and Recreation http://www.spra.sk.ca/
The Leisure Information Network http://www.lin.ca

2. To reduce tobacco use and the harm it causes in the population of Saskatchewan

Objectives	Indicators	Evidence-based Strategies
To prevent tobacco use among young people: • By ____, reduce current smoking prevalence among youth aged 15-19 years by _____% • By ____, reduce current smokeless tobacco use among youth aged 15-19 years by _____% • By ____, ____ % of children and youth will have the knowledge and skills needed to avoid tobacco use	• Per cent of current smokers aged 15-19 years • Percent of children and youth who delay onset of smoking from current initiation age of 12-14 years • Per cent of smokeless tobacco users among those aged 15-19 • Per cent of children and youth who choose not to continue smoking using smokeless tobacco once initiated • Percent of children and youth who have knowledge of the immediate and long-term consequences of tobacco use • Percent of children and youth who demonstrate skills in resisting pressure to smoke/use smokeless tobacco products • Percent of tobacco sales outlets that do not sell tobacco products to children under 18 years during sting operations • Percent of schools with a functional, effective tobacco policy	• Support comprehensive education in schools • Advocate for school-based programs combined with community and media-based activities • Support tobacco prevention initiatives such as Students Working Against Tobacco (SWAT), Heart and Stroke's Fly Higher program and "Just Say No" • Promote public education such as television ads, websites, posters and billboards • Provide inservice education and professional development to school, health, and community-based workers • Increase tobacco prices and excise taxes • Support enforcement of current (federal 18 year old limit) or stronger future legislation restricting sales to minors and enforcement • Advocate for strong legislation that raises the legal age for the sale of tobacco to 19 years, and restricts the sale of tobacco to licensed outlets
To prevent the exposure of non-smokers to environmental tobacco smoke in public places, workplaces, and homes: By ____, _____ % of public places, workplaces or homes are smoke free	• proportion of public places that are smoke free • proportion of workplaces which are smoke free • proportion of children exposed to environmental tobacco smoke (ETS) at home • Process and intermediate outcome indicators such as establishment of local coalitions, passage of	• Passing and enforcing strong clean indoor air regulations which contribute to changing social norms and may decrease tobacco consumption among smokers and increase smoking cessation • Work with local political organizations to develop public place bylaws • Work with other organizations (including the health district) to develop their own tobacco policies • Advocate to different levels of government for legislation to eliminate

	bylaws, or tobacco related attitudes documented in a survey	smoking in public places and workplaces • Use social marketing through mass media • Enforce bylaws related to tobacco
Smokers will stop using tobacco products • By _____, reduce current tobacco use among adult population by ___% Note: Similar objectives/ targets can be defined for sub groups such as pregnant women, hospitalized patients, low income groups, youth, and Aboriginal people. Note: Similar objectives/ targets for smokeless tobacco can be developed where it is a priority.	• Number of people among all adults or target groups who stop smoking. (Quit rates can be measured for specific programs; it's more difficult to measure at population level) • Quit rates in target groups • Prevalence rates for current use, quit rates for smokeless tobacco • Intermediate outcome indicators for specific programs or interventions e.g. the number using self help manuals e.g. 1 year quit rates of program participants	• Changing physician behaviour, medical systems procedures, and insurance coverage to encourage widespread use of state of the art treatment of nicotine addiction. Brief physician advice to quit smoking can double or quadruple normal quit rates, while a combination of behavioral counseling and pharmacological treatment can boost success up to 10 times • Provide services to individuals. These may include individual provider based interventions, physician counselling, behavioral counselling, drug plan coverage for products to treat nicotine addiction and self-help manuals • Provide services to target groups • Some policy interventions, such as workplace smoking bans, may lead to higher quit rates
By ____, ____% of residents will express opinions showing that tobacco use is not considered normal.	• Knowledge, attitudes and beliefs can be assessed during population surveys • Reported exposure to the messages, as well as knowledge and attitudinal change measured following campaign in target group	• Changing many facets of the social environment to reduce the broad cultural acceptability of tobacco use • Comprehensive approaches combining community interventions, mass media campaigns, and program policy and regulation are the most effective in changing social norms and reducing tobacco use
By ____, there will be a tobacco reduction strategy for Aboriginal groups	• Number of jurisdictions with tobacco reduction strategies in place for Aboriginal groups	• Work with Aboriginal organizations to support the development and implementation of a strategy on Aboriginal tobacco use, including indicators/targets for judging its success

Key Partners

Key stakeholders or partners include governments and agencies such as Saskatchewan Health, Saskatchewan Education, and municipal councils, education at local, provincial and post-secondary levels, health-related organizations such as Saskatchewan Medical Association, Saskatchewan Heart and Stroke Foundation, Saskatchewan Lung Association, Canadian Cancer Society-Saskatchewan Division and Saskatchewan Cancer Agency as well as coalitions including Saskatchewan Coalition for Tobacco Reduction and local coalitions.

Rationale

Tobacco use has a massive impact on health. Over 1,600 Saskatchewan residents die each year from tobacco-related causes. That is one in five deaths. Nationally, tobacco kills 45,000 Canadians yearly (21% of all deaths). More people die from tobacco related illnesses than traffic accidents, guns, AIDS and alcohol combined.

Number of People Affected

Health Canada reports:

- There are six million smokers in Canada, accounting for 25% of the total population 15 years and older, a decline from 29% in 1996 and 31% in 1994
- Youth begin smoking between 12 to14 years of age
- Smoking is most common among young Canadians, particularly those age 18-22
- Saskatchewan is one of three provinces where the teen smoking prevalence rate of 34% clearly exceeds those of the general population at 25%
- Smoking rates for 10-15 year olds is 7% for boys and girls.

In Saskatoon, 25% of grade 5 students reported having tried smoking at least one puff of a cigarette. Over half reported that they started experimenting with cigarettes by the age of 8 years. When these same students were in grade 8, 14% of the boys (almost 3 times the national average) and 6% of the girls, reported smoking daily.

Smokeless tobacco use is prevalent in our province with usage rates increasing in middle and older teens. In Saskatoon, 8% of 13 to 14 year olds state they are using chewing tobacco. Adolescent users of smokeless tobacco are more likely than non-users to become cigarette smokers.

Teen smoking rates are increasing in Canada, growing from 21% in 1990 to 29% by 1996/97. Teen smoking rates in females in Canada were 4.3% lower than in males in 1981; in 1996/97 they were 3.7% higher than males. Smoking rates in Aboriginal populations in Canada are roughly twice as high as in non-Aboriginal populations.

Seriousness/Impact on Population

Smoking is the leading cause of cancer deaths in men and women, being responsible for almost one-third of all cancer deaths in Saskatchewan. It also causes cardiovascular disease, atherosclerosis, and chronic obstructive pulmonary disease.

Mortality from cancers of the lung, trachea, and bronchus in women in Saskatchewan increased from 18 per 100,000 in 1984 to 31 per 100,000 in 1995; lung cancer surpassed breast cancer in the mid-1990s to become the most common cause of cancer related death in women in Saskatchewan. This is related to the increase in smoking rates among women 20 to 40 years before. Smoking during pregnancy increases the risk of delivering a low birth-weight baby who is at increased risk of perinatal and neonatal death and long-term health and developmental problems.

Second-hand smoke causes heart disease, lung and other cancers in non-smokers . Children of parents who smoke have more acute respiratory illness and infections including chronic cough, bronchitis, tracheitis, laryngitis, pneumonia and impaired respiratory function compared with children of non-smoking parents. Ear infections are more common when children are exposed to second hand smoke.

Additionally, sudden infant death syndrome is more common where babies are exposed to second hand smoke.

Tobacco is considered as a "gateway" drug leading to experimentation with and abuse of illicit drugs and substances. This is of particular concern when we see our teens taking up tobacco use at an increasing rate.

Modifiable Factors Related to Tobacco Use

Smoking or use of other tobacco products is a modifiable risk factor for many diseases, some of which are described in the previous section. This section also describes modifiable factors that affect tobacco related behavior using a framework of the determinants of health.

Personal Health Practices and Coping Skills: Despite the evidence that cigarette smoking is linked to numerous diseases, and the warnings that tobacco use is harmful, young people persist in beginning and continuing to smoke. Predictors and correlates of adolescent smoking include:

- Attitudes toward and knowledge/beliefs about and intentions to begin smoking
- Self-esteem or self-image, emotional well being, personal efficacy, intelligence, academic achievement
- Level of susceptibility
- Amount of control teenagers perceive they have over their lives and their health
- Self-efficacy, the use of alcohol and other drugs
- Risk taking and rebellious behavior.

Social Support Networks: Parents, other adult role models, siblings and peers' smoking behavior and approval of smoking are factors which have the strongest influence on adolescent smoking. Friends or peer influence is the most common reason teenagers give for smoking.
Health Services: There is limited health service in Saskatchewan to assist tobacco users who want to quit. While nicotine replacement therapies are now available without prescription, their cost is still a barrier particularly to those with little disposable income.
Education: Tobacco prevention education in Saskatchewan schools is not mandatory. Therefore, students do not receive continuous and consistent information during a time when they are most susceptible to initiating tobacco use. This needs to be done early and often to be effective. In most cases this means that grades 4 to 6 are the crucial years with follow-up in later years.
Physical Environment: Research indicates that lung cancer risks from second-hand smoke are greater than the risks from the hazardous air pollutants from all regulated industrial emissions combined. There is no provincial legislation that prohibits smoking in public spaces. Public place bylaws/workplace regulations and policies can effectively decrease exposure to second hand smoke. Environmental factors such as accessibility, advertising, taxation and restrictive policies and laws have been related to smoking behavior in teens. Saskatchewan schools have provided a smoke-free environment in their buildings, but there are many schools that designate space on school grounds for cigarette smoking.
Income and Social Status: Socioeconomic status is consistently identified as a predictor of smoking in both adult and adolescent populations, with those in lower income categories being more likely to smoke. Among adults, Canadian statistics show that a higher proportion in lower income groups are either current or former smokers compared to middle or highest income groups. Raising taxes and cigarette prices has clearly led to a moderate decrease in smoking rates.
Health Status Disparities: Canadian statistics consistently show that smoking rates in Aboriginal people are approximately double the Canadian average at all ages. The cultural role of tobacco complicates tobacco control in these populations.

Evidence-based Strategies

There is strong evidence to suggest that tobacco reduction requires a comprehensive approach including preventing tobacco use among young people, persuading and helping smokers to stop using tobacco products, eliminating exposure to second hand smoke and denormalizaton. (The intent of denormalization is to make tobacco use less socially acceptable without blaming the victim.)

Effective practices for tobacco reduction for Aboriginal people may require somewhat different strategies. Aboriginal populations are unique due to the issues of the high smoking prevalence rates, the clustering of other risk factors such as diabetes, the separate political structures, the jurisdictional boundaries in health care delivery, traditional uses of tobacco and the movement of people between First Nations communities and urban areas. It is clear that Aboriginal organizations must be involved in developing and implementing any strategy for Aboriginal tobacco use. This issue is most appropriately considered at a provincial level, and it will be more of an issue for some health districts than for others.

A clear provincial strategy and commitment is required as a solid foundation upon which health districts can define their own tobacco related priorities and goals and develop the strategic plans to address them. The work of the provincial All Party Committee on Tobacco Control during the winter and spring of 2000 is a critical first step.

In the absence of a provincial framework, the goals from the national strategy document are useful:

- Prevention: Preventing tobacco use among young people
- Cessation: Persuading and helping smokers to stop using tobacco products
- Protection: Protecting Canadians by eliminating exposure to second hand smoke
- De-normalization: Educating Canadians about the marketing strategies and the tactics of the tobacco industry and the effects the industry's products have on the health of Canadians in order that social attitudes are consistent with the hazardous, addictive nature of the products

Many effective interventions can only be put in place at a provincial or federal level. Pricing strategies, widespread social marketing campaigns, certain types of legislative interventions, and litigation directed at the tobacco industry are examples.

There are also examples of the importance of local interventions and leadership. Perhaps the strongest example is that of protection from environmental tobacco smoke in public places through municipal bylaws.

It is also clear that strictly educational strategies (in the sense of conveying information to individuals one-on-one about the health effects of smoking) are inadequate. Where the term "education" is used in this document, it is intended to be synonymous with social marketing which includes targeting information to a person or group in order to effect behavioral or attitudinal change.

New Directions for Tobacco Control in Canada identified five strategic directions for achieving tobacco control:

- Policy and legislation: To ensure coordination of tobacco policy across sectors and implementation of organizational policies and legislation across sectors that support reducing tobacco use
- Public education: To make available and accessible services and programs about tobacco and tobacco related issues, which address prevention, cessation, protection and de-normalization.
- Industry accountability and product control: To regulate the manufacturing, marketing and sale of tobacco products to reduce addiction and disease

- Research: To increase knowledge of tobacco and tobacco use, the tobacco industry, effective interventions for tobacco control and health and socioeconomic impacts of tobacco use
- Building and supporting capacity for action: To increase the ability of individuals, health intermediaries, and communities at the national, provincial/territorial and local levels to take action.

Note that public health staff members are often responsible for enforcement of local (municipal) public place smoking bylaws across Canada. In Saskatchewan this is true in Regina, where public health inspectors do the street level enforcement, but the City Solicitor is in charge of prosecutions.

Consequences of Not Responding

Tobacco exposure is one of the leading Modifiable Risk Factors. Unless it is addressed successfully, there will continue to be increases in the rates of death and illness due to this addictive drug.

Note: A longer version of the tobacco issue paper is available.

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3. To promote healthy eating habits that support good nutrition and reduce the incidence of nutrition and obesity related chronic diseases.

Objectives	Indicator	Evidence-based Strategies

To increase the number of Saskatchewan residents whose eating habits are within the guidelines of the Nutrition Recommendations for Canadians (or Canada's Food Guide)
• By ____, ____% of people will report eating at least 5 servings of vegetables and fruit per day
• By ___, ___% of people will consume over 5 servings of grains per day, with a minimum of 3 whole grains.
• By ___, ___% of people will report eating no more than 10% of daily energy as saturated fat and less than 30% of energy as total fat
• By ___, ___% of people will consume adequate amounts of calcium
• By ___, ___% of people will consume the recommended amount of sodium per day
• By ___, ____% of infants will be breastfed exclusively for at least 6 months
	• Nutrient intakes and eating patterns
	• Number of people consuming a minimum of 5 servings of fruit and vegetables a day
	• Number of people consuming over 5 servings of grains a day, with a minimum of 3 whole grains
	• Number of people consuming less than10 % saturated fat and less than 30% total fat a day
	• Number of people consuming adequate calcium per day
	• Number of people consuming the recommended amount of sodium per day
	Percentage of children breastfed at birth, 6 months, 1 year and 2 years and beyond
		• Facilitate knowledge and skills of parents, educators, health personnel and day care staff through provision of appropriate/ accurate/ consistent nutrition information
		• Implement programs and develop partnerships that provide all people with opportunities for developing skills and accessing nutrition knowledge. For example
		  • Grocery store nutrition programs
		  • Cooking classes/demos
		  • Use of media
		  • Train the trainer
		  • Peer education such as Fly Higher
		• Partner with Saskatchewan Education in the development of appropriate nutrition and active living curriculum
		• Implement programs that promote, protect, and support breastfeeding

To increase the number of people with a healthy weight and to decrease obesity • By ____, to increase to ___ the percent of children and adolescents with healthy body weights • By ___, ___% of adults will have a healthy body weight • By ___, ___% of people will report eating habits and physical activity levels that will support healthy body weights	• Percentage of children at various ages whose height/weight meet specified criteria (to be established) • Incidence of eating disorders • Incidence of body image dissatisfaction • Percent of adults with body mass index (BMI) of 20 – 27 • Reported eating patterns and physical activity levels	• Prevention of childhood obesity is targeted as a key strategy for reducing overall obesity • Build consensus and develop a provincial strategy regarding the role of appropriate eating and physical activity patterns • Implement programs that focus on health enhancement, not weight loss • Advocate with child-care facilities (licensed and unlicensed) to provide healthy foods • Collaborate with community groups to develop practical materials on parenting that emphasize roles and responsibilities for food choice.

		physical activity, healthy weights and positive body images • Advocacy with schools in support of policies, curriculum and a healthy school environments • Encourage women's health groups to act as advocates of the concept of healthy weights, including size acceptance Facilitate programs that target the life stages when excess weight gain is likely to occur (i.e. early adulthood, pregnancy, menopause)
To increase the availability of nutritious foods and create environments in which healthy eating is supported • By ___, there will be ___ breastfeeding friendly public places • By ___, there will be ___ more (type of facility) with healthy food choices available	• Percent of public places, designated breastfeeding friendly • Percent of health care facilities designated Baby Friendly • Number of day cares and child care facilities following the Day Care Guidelines. • Number of schools with school food policies • Number of rinks, recreation facilities and restaurants offering healthy food choices	• Facilitate the development of supportive communities and environments in which breastfeeding is the cultural norm • Workplace facilities will create policies and environments that support healthy nutrition practices • Facilitate community partnerships and participation to identify needs and develop solutions related to the availability of nutritious foods Develop partnerships to increase the availability and marketing of healthy choices in grocery stores and restaurants and schools
To ensure food security (as defined by people having access to nutritionally adequate and personally acceptable foods, in a manner that is empowering rather than degrading) **Refer to Food Security goal under Healthy Families section for greater detail*	Examples of indicators: • Minimum wage is _____% of poverty line • Social assistance is _____% of poverty line • Number of food security programs with a healthy food policy Number of food security programs with beneficiaries on the boards of food security initiatives	Examples of effective strategies: • Facilitate community and intersectoral partnerships and participation to identify the need for, and development of, community based programs such as food banks, good food boxes, community kitchens, community gardens, school feeding programs and Wheels to Meals

Key Partners

- Health professionals such as public health nutritionists, health promotion coordinators, epidemiologists, active living coordinators, other nutrition professionals, nurses, physicians
- Education, recreation and social services agencies
- Professionals such as teachers, coaches, school administrators, fitness leaders and
- Non-government agencies, local key stakeholders, community agencies, recreation, the food industry.

Rationale

Heart disease, stroke, type 2 diabetes, some cancers, osteoporosis and obesity have nutritional risk factors. Because these conditions include the leading causes of death and illness, they result in considerable medical expenses, lost work, disability and premature deaths.

Number of People Affected

Virtually everyone is affected to some degree by nutritional risk factors. For example, it is estimated that less than 5% of infants are exclusively breastfed for the first six months. The Saskatchewan Heart Health Survey (1990) found that more than a third of adults are overweight, only one half recognized the importance of salt and alcohol in the development of high blood pressure and 20% had a cholesterol level that was considered to be high. Surveys consistently find that few people consume the recommended amounts of vegetables, fruit or whole grains.

Nutrition-related risk factors develop over years and decades. Many have their beginnings in childhood so healthy eating habits should start early with breastfeeding and continue through life.

Seriousness/Impact on the Population

Fourteen percent of all deaths have been attributed to poor diets and/or sedentary lifestyles. In the United States it is estimated that healthier diets might prevent $71 billion per year in medical costs, lost productivity and the value of premature deaths associated with conditions such as coronary heart disease, cancer, stroke, diabetes, hypertension, overweight and osteoporosis. It should be noted that there are significant interrelationships between many of the chronic diseases and that most chronic diseases are complex and multifactoral. It is clear, however, that nutrition does play a large role in their development.

Heart disease is the leading cause of death and a major cause of hospitalizations in the province. Cardiovascular disease accounts for 37% of male deaths and 41% of female deaths.

The Canadian Cancer Society estimated that 20% of all cancers are related to nutrition. Cancers affected by nutrition include breast, colon, stomach, mouth, pancreas and prostate. The American Institute for Cancer Research estimates that 35 to 50% of breast cancers could be prevented through nutrition and related lifestyle factors.

It was estimated that in 1996 there were 38,124 people with diabetes in the province. Of these, 3,224 were newly diagnosed. Diabetes accounts for a significant portion of health care spending. Diabetes is the leading cause of end stage renal disease, and is a risk factor for heart disease, stroke and hypertension. Diabetes is also the leading cause of blindness and nontraumatic lower limb amputation. It is estimated that diabetes accounts for nearly 12% of hospitalizations in Saskatchewan.

Hypertension is a major risk factor in heart disease, stroke, and renal disease. Mortality statistics grossly underestimate the impact of hypertension as a cause of death.

Osteoporosis currently affects one in four women and one in eight men over the age of 65. Incidence of osteoporosis is probably underreported in mortality and morbidity statistics as it is seldom a primary diagnosis. It is related to hospital admissions for falls and hip fractures in the elderly.

The World Health Organization has recognized that obesity represents a rapidly growing threat to the

health of populations world-wide and has classified obesity as a disease. As well, as the prevalence of childhood obesity increases, chronic diseases that have typically been associated with people in their fifties may begin to appear at a younger age. In the United States, the economic cost of obesity was estimated to by $69 billion in 1990 (approximately 8%) of the total health care costs.

Modifiable Risk Factors

Major Modifiable Risk Factors for heart disease and stroke include elevated blood cholesterol levels, diabetes, obesity, hypertension, physical inactivity and smoking. Nutrition has an impact on several of these Modifiable Risk Factors. Fat intake, in particular, saturated fat intake is associated with elevated cholesterol levels. Increased intake of fruit, vegetables and legumes has a protective effect.

Studies are increasingly showing a strong protective effect against cancer associated with increased consumption of fruit, vegetables and fiber. Some cancers may be attributed to high fat diets, although the link may be through obesity or because diets high in fat also tend to be low in fruit, vegetables and fiber. Alcohol and smoked, salted and pickled foods may increase the risk of cancers.

Type 2 diabetes is one of two main types of diabetes. It occurs most commonly in midlife and risk factors include physical inactivity and obesity. It is expected with obesity increasing, particularly in children, that the incidence will increase in the future and that it will likely develop at an earlier age. Type 2 diabetes accounts for approximately 90% of diabetes. Approximately 80% of people with type 2 diabetes have a history of being overweight.
Hypertension is associated with obesity, higher intakes of sodium and alcohol and possibly lower potassium and calcium intakes.

Risk factors for osteoporosis include poor nutrition and physical inactivity. Nutrition risk factors include low calcium and vitamin D intakes, and possibly high intakes of protein and caffeine. Calcium and vitamin D intake are particularly critical before age 30 when bone mass can increase.

Obesity is an important risk factor for heart disease, stroke, and some types of cancer, hypertension and diabetes. As with other chronic diseases, obesity is complex and multifactoral in cause. Childhood obesity is of particular concern, as scientific evidence has documented the continuation of childhood obesity into adulthood. Several environmental factors, in particular physical inactivity and nutritional practices, impact on the prevalence of obesity. As well, increased breastfeeding duration has been linked to a lower rate of obesity at the age of five.

Low incomes and low education levels exacerbate all of the nutritional risk factors.

Evidence-based Strategies

Because most chronic diseases are multifactoral, effective strategies will be based upon the population health promotion model and will include a number of strategies and many partners. Intersectoral collaboration is necessary.

Prevention of childhood obesity is a key strategy as there are many consequences to both self-esteem and health. Childhood obesity also increased the risk of weight related complications in adulthood. In the United States, it is estimated that the current generation of children will become the most obese generation of adults in the country's history. Efforts to deal with childhood obesity may also be more cost effective and successful than similar investments with adults. Long term effectiveness of most treatment strategies is abysmal so there is clearly a need to emphasize primary prevention. It is critical that

prevention strategies are implemented through schools and community based programs. Efforts should be targeted towards policy makers, health care professionals, community leaders and parents.

Childhood and early adulthood are critical times to target osteoporosis prevention strategies because these are the times peak bone mass is developed.

Healthy eating as outlined in the Nutrition Recommendations for Canadians (from which Canada's Food Guide was developed) forms the basis for all nutrition practice.

Food security and poverty have a huge impact on health and chronic diseases. People with low incomes experience increased negative health effects

Consequences of Not Responding

- Increased incidence of nutrition related chronic diseases, including cardiovascular disease, cancer, osteoporosis, type 2 diabetes, obesity and others
- Increased health care costs related to chronic disease

Note: There is a slightly expanded version of the nutrition report available.

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4. To minimize substance abuse to protect the health, safety, and quality of life for all, with special attention to the needs of children

Objectives	Indicator	Evidence-based Strategies
To reduce the rates of fetal alcohol syndrome (FAS) and fetal alcohol effects (FAE) By ___, fewer than ___% of infants will be born with fetal alcohol syndrome or fetal alcohol effects in Saskatchewan	• Rates of FAS and FAE • Number of public messages visible • Rates of screening for substance abuse among pregnant women early in their pregnancies	• Partner with community groups to develop and implement comprehensive strategies to meet community needs related to FAS and FAE prevention • Work with women of child bearing and younger ages in settings such as prenatal classes, schools, and community groups • Work with community and professional groups to increase knowledge and awareness and to encourage them to take up effective messages
To decrease the adverse consequences of substance use and abuse • By ___, there will be ___% fewer (name specific type of adverse consequence) • By ___, there will be a ___% increase in the recognition and referral to treatment of people with substance abuse	• Rates of motor vehicle accidents involving alcohol • Rates of hospitalizations due to substance abuse • Rates of substance abuse related violence • Rates of substance abuse related family dysfunction • Number of people referred and treated	• Work with community partners to assess the problems, identify the barriers to change and to develop and implement programs • Ensure that services are accessible through the province. • Incorporate substance abuse topics in the education of health care providers
To decrease the initiation of use of alcohol and illicit drugs among young people • By ___, less than _____% of youth, ages 12- 19 will say they have experimented with illicit drugs or alcohol	• The proportion of adolescents who disapprove of substance abuse • The proportion of adolescents who perceive risks associated with substance abuse • The rates of use of alcohol or illicit drugs among people ages 12- 19	• Support community wide programming involving school curriculum, peer leadership, parental involvement and education, and community task forces • Implement multiple strategies in youth education including refusal skills, support groups including family, and programs focusing on altering group norms on substance use

Key Partners

Key partners include drug and addiction services, other government agencies such as Justice and Education and nongovernment agencies such as Alcoholics Anonymous, Alanon and MADD (Mothers Against Drunk Driving). A number of other community agencies are also potential partners, recognizing that dealing effectively with issues related to alcohol and illicit drugs requires broad, community-based strategies.

In the area of FAS/FAE prevention, the Saskatchewan Institute on Prevention of Handicaps has a lead role. Canada Prenatal Nutrition Program, a Health Canada program active in several areas of the province, is another potential partner.

Rationale

Alcohol and drug abuse and their related problems are among society's most pervasive health and social concerns.

Number of People Affected

- The number of people estimated to be addicted to mood altering chemicals including alcohol ranges from 10% to 15%, with males showing a slightly greater prevalence than females.
- While everyone is affected to some degree by the behaviors of people who abuse substances, it is estimated that the ratio of co-dependents to dependents is 10 to 1; ten people who experience stress and distress due to the addiction of one person.
- The number of children addicted is again estimated to be between 10 and 15%.
- How children are affected by a parent's chemical abuse varies. Approximately 60% of children raised in homes with alcoholics show adverse effects into adulthood. On the other hand, 40% show great resilience. The effect on children is greatly influenced by which parent was the user and when, especially when considering FAS and FAE. FAS/FAE is considered to be the third leading cause of mental illness. The exact incidence is difficult to determine due to the difficulties in diagnosis. The Saskatchewan incidence of diagnosed cases of FAS was 0.585 per 1000 births in 1988-92. These are severe cases with significant handicaps. Brennan and Oie report that there are five to six FAE births per thousand live births in Canada and the United States (1999). The Institute of Medicine, United States, estimates neurologic development disorders caused by alcohol related effects due to prenatal exposure to alcohol at 1 in 100 births. FAS and FAE are totally preventable.

Seriousness/Impact on the Population

In 1995, in Canada, 6507 deaths and 82014 admissions to hospital were attributed to alcohol; and 805 deaths and 6940 admissions to hospital were due to illicit drugs. This translates to a total of 3.48% of the deaths and 6.98% of the hospitalizations.

The consequences of excessive alcohol consumption are extensive and serious. They include trauma such as vehicular accidents and falls, hypertension, gastrointestinal disorders such as cirrhosis, respiratory problems such as sleep apnea, psychiatric problems including suicide and depression, neurological and muscular disorders, poor pregnancy outcomes such as low birthweight, fetal alcohol syndrome and fetal alcohol effects and a number of metabolic disorders including obesity, gout and diabetes. The range of social problems is also large including financial difficulties, marital conflict, absenteeism, unemployment, domestic violence and assault. This list is by no means complete. For example, it has been reported that

50% of all individuals convicted of a federal offence admit to using either drugs or alcohol the day they committed the offence; 70% of inmates in federal prisons admit to substance abuse problems. The ubiquity of excessive drinking means that many of these problems present in relative isolation, leading alcohol to be considered the modern "great imitator" of other diseases.

Use of illicit drugs also associated with an extensive array of health and social problems. Many are similar to those listed for alcohol but others are unique. Intravenous drug use is associated with increased incidence of blood borne pathogens, in particular HIV, hepatitis B and hepatitis C.

The indirect effects of alcohol and substance abuse are also seen among family members and friends. They can include injury, depression, anxiety and abuse.

Modifiable Risk Factors

- The use of alcohol and illicit drugs tends to increase as income and education levels decrease
- Youth are influenced by the attitudes and actions of peers and families
- A number of family and community related risk factors have significant effects on FAS and FAE. This includes self esteem, personal coping skills and social factors of mothers
- Some women do not know that alcohol is dangerous during pregnancy. Research shows that knowing about the risk may affect the behaviour of some but not those at highest risk
- Some mothers at risk of having a child with FAS or FAE have one of these conditions themselves. This requires development of different strategies to reduce risks

Evidence-based Strategies

The following section focuses specifically on the area of **FAS and FAE prevention.**

To reduce FAS and FAE, programs must be multi-faceted. FAS and FAE may be the result of a complex interaction of physiological factors such as altered brain chemistry and social factors. Programs need to include community education, interventions with alcohol-abusing mothers, parenting education, and, for children born affected by alcohol, early identification and intervention.

Educational programs have been successful in increasing the level of information in the general population. Successful educational campaigns are characterized by low levels of fear, emphasis on short rather than long-term benefits and provision of specific behavioural techniques. The teenage population is the most important to target for long term effect in prevention. Successful programs must move beyond the classroom to include the family, community and society as a whole. Clearly another group of interest is women who are pregnant or plan to become pregnant; provision of written material along with verbal instruction has decreased alcohol consumption. (prenatal screening needs to become standard procedure) Paternal drinking patterns need to be addressed as well. There is a substantial group of young women (ages 20 to34) who are highly educated who are not alcohol abusers but for whom alcohol plays a social role who also need interventions. There are a number of short substance abuse screening tools such as CAGE, T-ACE, the 5 Ps, the NET, TWEAK, KUT DOWN and another longer one from Alcoholics Anonymous.
Awareness of the risks of FAS/FAE does not translate into action in high risk drinkers. In fact, these women are the least responsive to educational campaigns and traditional approaches, including advertising, have had little or no impact on women who drink heavily. Direct interventions focussed on changing individual drinking behaviour have the best chance of success. If a media campaign is used, it will work best if the message is positive and it focuses on motivating women to seek treatment. Simplistic

statements and slogans build unrealistic expectations in women and the public. They may also discourage women with the greatest need for help by instilling them with fear and guilt.

Culture-specific programs that account for cultural values, traditions and taboos need to be developed with Aboriginal women. They need to be supported by elders.

Best practices for **more general prevention of alcohol and drug-related effects** also require multilevel, multiservice strategies including community education, early identification and intervention. They parallel those identified for FAS/FAE prevention.

Consequences of Not Responding

- Continued high incidence of FAS and FAE, sometimes carried into future generations as women with FAS or FAE have babies with one of these conditions
- Continued health cost of treatment of the diseases associated with substance abuse
- Continued societal costs of violence in general and particularly family violence
- Continued rates of youth initiating substance use and abuse

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5. To increase the capacities of communities to reduce unhealthy levels of stress and to improve the overall happiness of residents

Objectives	Indicator	Evidence-based Strategies
To reduce the level of poverty in order to improve mental wellbeing • By ___, reduce number of low income families to no more than ___per 1000 • By ___, reduce number of single women with low incomes to no more than ___per 1000	• Number of low income families • Number of low income women	• Support for programs that provide people with the opportunity to advance education levels, increase number of available jobs, remove barriers to obtaining employment and review of current social assistance programs
To improve social supports/ reduce social isolation in communities • By ___, initiate ___ social support programs for communities in rural areas or in other areas of particularly high stress	• Reports of farm and rural stress • Population numbers in rural areas. Population trend in agriculture • Number of social support programs to reduce isolation	• Advocacy for programs and services that are appropriate and cost effective to improve services in rural areas e.g. telehealth • Support communities to ensure equitable distribution of resources to children, teens, adults and seniors • Review current programs for effectiveness and to reduce need for population to relocate due to road conditions, agricultural policies, etc.
To increase levels of education • By ___, ___% of young people will graduate from high school and ___% of population will complete post-secondary education	• Number of graduates from high school, vocational and university programs	• Advocate for removal of barriers to completing education. • Explore distance education options, electronic options • Support adult upgrading, including part time study
To reduce workplace-related stress • By ___, stress related work leaves will be reduced to ___per 100 workers • By ___, ___ health districts will implement a workplace wellness program for employees	• Number of stress related work leaves • Number of health districts with workplace wellness programs	• Encourage development of comprehensive workplace wellness programs that address the root causes of stress
To enhance the resiliency and mental wellbeing of families • By ___, the number of low birth weight babies will be reduced to ___ per 1000 (Stress-related conditions can increase the risk of low birth	• Number of babies born with low birth weight	• Work with community to identify needs and barriers related to family support. Work together to implement solutions • Use media and other community resources to alert families of

weight; having a low birth weight baby can, in turn, be a source of stress because of the health consequences) • By ___, the number of families taking prenatal classes will increase to ___ per 100 • By ___, ___% of parents will say that they have adequate support in raising their children	• Percent of expectant parents taking prenatal classes • Number of parents with sufficient family, community or professional support for their families • Number of families, including rural families, with access to adequate child care	benefits of prenatal classes • Work with community resources to educate the public about prenatal needs
To reduce the physical and mental health consequences of excessive stress • By ____, the number of physician visits related to stress will be reduced by ___%	• Number of physician visits related to stress /emotional issues	• Re-orient health services to focus on the whole person, the family and the community • Provide resources for individuals to develop personal coping skills

Key partners

A number of sectors in health- mental health, public health and acute and long term care services need to be active partners. Other government departments such as Social Services and Education, schools, community and family groups, religious organizations and spiritual leaders and the media all play important roles. This is an area in which community organizations and members are absolutely critical partners.

Rationale

Although the term stress may have different meanings to people, it is recognized that high levels of negative stress, unhappiness and mild depression do have significant effects on health. Stress has been implicated as a risk factor in numerous chronic illnesses including heart disease, lung disease and arthritis. Stress can have a negative impact on learning capacity and can impair the immune system.

Number of People Affected

Forty three percent of all adults suffer adverse health effects due to stress. Women ages 14 to 44 experience stress at two times the rate of men in the same age category.

Seriousness / Impact on Population

Seventy five to ninety percent of visits to primary care physicians are for stress related complaints. More than 6% of people in the lowest income groups report experiencing a major depressive episode in the previous year. Pregnant women under stress are four times as likely to deliver their babies prematurely than are women who experience little stress.

Modifiable Risk Factors

The Population Health Promotion Model shows a number of determinants of health such as income and education. These determinants are associated with major changes in health and wellbeing; it is almost certain that much of their effect is due to healthy or unhealthy levels of stress. Consider the stress-producing or reducing effects of the following determinants of health.
Income and social status: Poverty and social disadvantage have been associated with higher levels of cardiovascular diseases and other chronic illnesses.
Healthy child development /school environments: Healthy child development should include good coping skills, particularly handling stressful situations.
Social support networks: Any crisis or transition that a family member experiences affects the family as a unit. Support from family, friends and communities helps solve problems and deal with difficult situations.
Level of education: stress-coping practices tend to be stronger in persons with greater levels of education.
Working conditions: Men with stressful jobs and little decision-making authority are more likely to develop high blood pressure and to die from heart attacks than those who have more freedom to make decisions.
Personal practices / coping skills: As the ability to cope with stress increases, the incidence of stress related problems decreases. Coping skills are the internal resources used to handle outside pressures. How we cope with events in our life has an impact on health.
Cultural / spiritual practices: People who actively practice spiritual / religious activities tend to have better coping skills and less incidence of stress-related illness.

Evidence-based Strategies

Stress inducing environments are complex. Application of the Population Health Promotion Model to overcome barriers and to develop sustainable change that supports good mental health in the community is critical. Some types of initiatives that have proven successful are:

- Peer support groups
- Self-help groups
- Pet therapy programs
- Programs that build resilience in youth and farm families
- Workplace wellness programs
- Cultural or spiritual-based programs

While it has been clear for some time that stress-related illnesses are numerous and serious, as with other issues, there are still gaps in our understanding of how best to address them. New research and best practices in mental well-being and stress management are emerging on a continual basis. Journals, websites and research should be monitored for new information. This is not an excuse, however, to sit idly in the areas for which there is already good evidence.

Consequences of Not Responding

- Increased incidence of chronic disease
- Increased incidence of breakdown in family units
- Increased incidence of suicide

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Safe Environments/ Communities

GOAL AREA: ENVIRONMENTAL HEALTH

BROAD GOAL: To influence physical, psychosocial, biological, and chemical factors in the environment to achieve optimal health.

In order to address the goal area successfully, health districts must work on the following issue goals.

ISSUE GOALS:

1. Reduce the risk of injury or disease associated with the consumption of food and water.

2. Reduce the risk of injury and disease associated with water used for recreational and therapeutic purposes.

3. Reduce the risk of injury and disease associated with accommodations and public facilities.

4. Promote access to quality, affordable, and safe living accommodations.

5. Reduce risk of injury and disease associated with environmental hazards related to noise, pesticides, radiation, and other toxicants.

6. Strengthen sustainable communities and environments.

7. Reduce the risk of injury and disease related to hazardous waste, biomedical waste, liquid and solid waste.

8. Reduce the risk of morbidity and mortality related to disasters that occur in a community by planning, coordinating, implementing and evaluating emergency measures activities.

Health districts may choose from the following sample objectives, indicators, and evidence-based strategies for each issue goal or develop there own to accommodate local needs and resources. Rationale for each issue goal is also included.

1. Reduce the risk of injury or disease associated with the consumption of food and water.

Objectives	Indicator	Evidence-based Strategies
FOOD		**Applies to both food and water:**
• By___ establish baseline data for food-borne illnesses and related outbreaks.	• Existence of baseline data	• Use of staff trained in investigations, surveillance, monitoring, enforcement, public health risk analysis and risk communication
• By ___ reduce the number of food-borne illness outbreaks in the district by ____%.	• Number of outbreaks	• Use of risk-based inspection system protocols developed in other provinces
• By___ reduce the number of food-borne illness outbreaks in commercial facilities by ___%.	• Number of outbreaks	• Consideration of non-regulatory compliance tools such as self-evaluations with district audits; targeted education programs without exposing the district to regulatory liability
• By ___ reduce the number of food-borne illnesses in the district by ___%.	• Number of illnesses related to food	• Involve participation of clients and industry in the development of standards , guidelines and education programs.
• By ___ develop and implement a risk based inspection system for regulated facilities.	• Existence of system (includes setting risk categories and related inspection frequency protocols)	• Seek agreements wth other agencies to minimize duplication of services
• By __ a public information program concerning the prevention of foodborne illness will serve the district.	• Existence of program	• Use of water and food safety standards developed nationally or by other provinces or states
• By __all public eating establishments and childcare facilities will have ___% of their employees trained in safe food handling.	• % of employees trained in each establishment/facility	• Utilize education, community development and health promotion approaches that complement regulatory approaches
DRINKING WATER	• Existence of baseline data	• Collaboration with other agencies (e.g. Sask Ag and Food, SERM, SUMA, SARM, etc.) and industry on food or water safety initiatives
• By ___ establish baseline data for bacteriological waterborne illness and related outbreaks.		
• By ___ reduce bacteriological waterborne illness in the district by ___%.	• Number of illnesses	
• By___ Saskatchewan Health, in concert with the districts, will strike an agreement with SERM on roles and responsibilities regarding communal, public and private water supplies.	• Existence of agreement	
• By ___ the district will develop and implement a risk based inspection system for water systems under Health's regulatory jurisdiction (under 4000 gallons daily flow).	• Existence of system	
• By ____ the district will co-develop with Sask Health	• Existence of regulations and standards	

regulations or standards for systems under Health's regulatory jurisdiction. • By _____ every district water system under Health's regulatory jurisdiction and serving the public will have a water quality monitoring program for bacteriological and chemical tests (specify) with a testing frequency of _____ yearly. • By ____ 100% of complaints received by the district regarding drinking water quality associated with systems under Health's regulatory jurisdiction and serving the public will be investigated, verified, corrections required of the operator. • By _____ the district will have a public information program offering water quality and system advice for small private on-site systems (ie farms).	• Existence of water quality program • Number of complaints received and resolved • Existence of program.	

Key Partners

Health, Saskatchewan Environment and Resource Management, Saskatchewan Ag and Food, Saskatchewan Water Corporation, industry associations, community

Rationale

The provision of safe food and water is governed by legislation in Saskatchewan and subsequent regulations. Examples include Public Health Act 1994, Sanitation Regulations, Bakeshop Regulations, Public Eating Establishment Regulations, etc.

Number of People Affected

Since food and water are necessary to sustain life, all persons are exposed to potential food and water-borne illness.

Seriousness/Impact on Population

In terms of disease burden, Health Canada has stated: "Food-borne illness is a serious concern for health departments in Canada since there is an estimated 1,000,000 illnesses and approximately 30 deaths occurring annually. The costs associated with these illnesses are estimated to exceed one billion dollars each year."

In the United States, the Centres of Disease Control and Prevention (CDC) has, in September 1999, released the most complete estimates to date on incidence foodborne disease in the United States. Diseases caused by food may cause an estimated 325,000 serious illnesses resulting in hospitalizations, 76,000,000 cases of gastro-intestinal illnesses, and 5,000 deaths each year.

Regarding water, Health Canada has indicated that waterborne illness costs Canada approximately $200 million yearly.

In the province, there are between 5000 and 6000 food establishments, 1500 water systems (under 4000 gallons daily flow and serving the public) and approximately 150,000 people utilizing their own private, onsite water systems. District programs related to these facilities and systems are either regulatory or advisory in nature. District MHOs are also required by SERM's legislation to be an advisor to the Minister of SERM on environmental/public health issues, including issuance of precautionary drinking water advisories or "boil water "orders.

Applicable legislation or regulations: Public Health Act, 1994; Public Eating Establishment Regulations; Bakeshop Regulations; Sanitation Regulations.

Modifiable Risk Factors

Persons in lower socio-economic classes or having lower education levels are likely not in a position to make informed food and water safety decisions.
Persons or firms providing water and food to the public and who are operating at a financial loss may be more willing to lower food and water safety standards as a cost saving measure.

Evidence-based Strategies

The 20 deaths in a 1997 E.coli outbreak involving contaminated meat in Scotland and the 6 deaths related to the recent Walkerton tragedy attest to the need for continuing public health programs in these areas. The outbreak in Scotland contributed to strengthening their food regulatory regime, including implementing more stringent rules for processing food. Walkerton will likely have a similar effect. There is strong public support for food and water regulatory programs in most, if not all, countries.

In order for regulations and standards to be effective, it is necessary to involve people and industries being regulated in the development process. Collaboration is therefore necessary.

Given the importance of efficiently and effectively carrying out a regulatory program, it is necessary for put resources in those areas where they can do the most good and where the health risk is the highest. British Columbia and Ontario have implemented a risk-based inspection system for their regulated food facilities.

The ultimate goal of water and food safety programs is to reduce or prevent illness or deaths. While system regulations and enforcement is one way to reach this goal, other means or tools may be more effective in situations where the public or target group is not receptive to being regulated. Examples include education, voluntary compliance, guidelines, use of warnings, alerts, and advisories, economic incentives, contractual remedies, and performance incentives.

Consequences of Not Responding

If the districts are not enforcing regulations and standards and this leads to an injury or death, then the district is open to regulatory liability. Further, the Saskatchewan government, which is responsible for passing health and safety legislation and regulations and funding the districts for enforcement programs, will be held accountable by the public.

If food and water regulations and enforcement programs are not in place, then Saskatchewan will be the only jurisdiction in Canada and among developed countries that does not have such basic health protection laws. Also, foodborne and waterborne illness will increase without regulatory and education programs.

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2. Reduce the risk of injury or disease associated with water used for recreational and therapeutic purposes.

Objectives	Indicator	Evidence-based Strategies
• By ___ establish baseline data on diseases, injuries, and drownings associated with regulated swim pools and surface water bodies.	• Existence of baseline data	• Use of staff trained in investigations, surveillance, monitoring, enforcement, public health risk analysis and risk communication
• By ___ reduce the number of diseases, injuries and drownings in public swimming pools in the district by ____%.	• Number of incidents	• Use of risk based inspection protocols developed elsewhere.
• By ___ reduce the number of diseases, injuries and drownings in private pools, lakes and other surface water bodies by ___%. (cross referenced with issue Goal 3#)	• Number of incidents	• Use of water safety and water quality standards and guidelines developed nationally or by other provinces or states
• By ___ develop and implement a risk based inspection system for regulated swim pools.	• Existence of system	• Consideration of non-regulatory compliance tools such as self-evaluation with district audits; targeted education programs without exposing district to regulatory liability
• By___ % recreational surface water bodies used for public swimming will be tested for microbiological quality, and posted if a disease threat exists	• Number of water bodies tested and posted	• Utilize education, community development and health promotion approaches that complement regulatory approaches
• By __ a public information program concerning the prevention of recreational water diseases and injuries will serve the district.	• Existence of program	• Collaboration with other agencies on recreational water quality initiatives
• By __all public swimming pools will have ____% of their operators trained in safe pool operation.	• % of operators trained in each establishment	
• By __ the number of boating injuries in the district will be reduced by __%.	• Number of incidents	

Key Partners

Saskatchewan Environment and Resource Management, Saskatchewan Recreational Facilities Association, Red Cross, municipalities, Regional Park Boards, Saskatchewan Association of Resort Communities.

Rationale

Safe recreational water is governed by legislation in Saskatchewan and subsequent regulations. Examples include the Public Health Act 1994 and Public Swimming Pool Regulations.

Number of People Affected

There are 550 licensed swimming pools and many private pools and recreational water bodies in Saskatchewan. It is difficult to determine the number of bathers using these facilities annually, but use does increase significantly during summer.

Seriousness/Impact on Population

Diseases known to be transmitted through recreational water (i.e. swim pools, beaches) contact include typhoid fever, dysentery, infectious hepatitis, and other gastrointestinal illnesses; conjunctivitis, trachoma, leptospirosis, blue green algae poisoning, ringworm and other skin infections; shistosomiasis, or swimmer's itch; upper respiratory tract diseases such as sinus infection, septic sore throat, and middle-ear infection. Very little information is available on disease outbreaks involving recreational water in Canada. However, in the United States, "Twenty-six outbreaks with 1363 cases due to recreational water use were reported to the Centers for Disease Control from 1986 to 1988. Seven outbreaks involved hot tubs, four whirlpools, six lakes, four pools, one creek, one pond, and one stream. Two of the outbreaks involved a hot tub and pool. The etiologic agent in the hot tub and whirlpool outbreaks was Pseudomonas and in one report, Legionella. Shigella sonnei was the agent in three lake outbreaks, plus one Norwalk-like and one acute gastrointestinal illness (AGI). Giardia, AGI, and Leptospira accounted for the remainder of the outbreaks except for four, for which the etiologic agent was not determined."

There have been several drownings in Saskatchewan's public pools, including hotel/motel pools, over the last 10 years. Installation of water slides at hotel pools has lead to increased use by the public.

Lakes in Saskatchewan continue to be affected by blue green algae blooms and are a common source of swimmer's itch. Cattle having open access to lakes and rivers can be a source of E. coli which may affect the swimmer accidentally ingesting the water.

Applicable legislation or regulations: Public Health Act, 1994 and the Public Swimming Pool Regulations. (Will likely include the Health Hazard Regulations.)

Modifiable Risk Factors

Risk factors vary according to the pool or type of water being considered. Regulation of pools assists in modifying the physical environment by assuring safe water quality and controlling unruly, risky behaviour by making life-guarding a requirement. Factors likely influencing levels of disease, injury or drownings in private pools and other recreational water bodies are related to socio-economic status, and education levels.

Evidence-based Strategies

There is strong public support for the regulation of public swimming pools in Canada and the United States. Most, if not all, regulations and subsequent amendments have been implemented following cases of drownings or injuries thought to be preventable.

In order for regulations and standards to be effective, it is necessary to involve people and industries being regulated in the development process. Collaboration is therefore necessary.

Many municipalities have put into place bylaws for private swimming pools that require barriers such as fences with a minimum height.

Given the importance of efficiently and effectively carrying out a regulatory program, it is necessary to put resources in those areas where they can do the most good and where the health risk is the highest. Many regulatory agencies across the country are engaged in revamping their inspection systems to reflect level of risk.

The ultimate goal of a recreational water safety program is to reduce or prevent illness, injury or death. While a system regulations and enforcement is one way to reach this goal, other means or tools may be more effective in situations where the public or target group is not receptive to being regulated. Examples include education, voluntary compliance, guidelines, use of warnings, alerts, and advisories, economic incentives, contractual remedies, and performance incentives.

Consequences of Not Responding

If the districts are not enforcing regulations and standards and this leads to an injury or death, then the district is open to regulatory liability. Further, the Saskatchewan government, which is responsible for passing health and safety legislation and regulations and funding the districts for enforcement programs, will be held accountable by the public.

Illnesses, injuries and deaths related to recreational water will increase without regulatory and education programs.

References

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Designing Regulatory Systems That Work, Saskatchewan Justice, December 1996.

3. Reduce the risk of injury and disease associated with public accommodation and public facilities.[1]

Objective	Indicator	Evidence-based Strategies
By _____determine baseline data for injuries and communicable diseases associated with public accommodations and public facilities within the district.	• Existence of baseline data	• Use of staff trained in investigations, surveillance, monitoring, enforcement, public health risk analysis and risk communication • Draw upon Health District Health Status Reports and other relevant sources of information to identify priority issues • Use of risk based inspection system protocols developed in other provinces • Consideration of non-regulatory compliance tools such as self-evaluations with district audits; targeted education programs without exposing the district to regulatory liability • Involve participation of clients and industry in the development of standards, guidelines and education programs. Note that some agencies have the lead role for specific standards (i.e fire code, building code, amusement ride safety, etc.) • Promote installation of breastfeeding and diaper changing stations • Use of public accommodation and facility standards developed nationally or by other provinces or states • Utilize education, community development and health promotion approaches that complement regulatory approaches • Collaboration with other agencies (e.g. Sask Labour, SERM, outfitters associations, hotel associations, municipalities.on health and safety initiatives) • Participate in Environmental Impact Assessments, plan approvals, and land-use reviews to ensure health and safety aspects are considered
By _____reduce the number of injuries and communicable diseases associated with public accommodations and facilities by ____%	• # of injuries and disease incidents occurring in public places in the district	
By ___ develop and implement a risk based inspection system for regulated facilities.	• Existence of risk-based system	
By ____ develop and implement a risk based complaint investigation system for non-regulated facilities.	• Existence of risk-based system	
____% of licensed facilities will be free of preventable health and safety hazards, including hazards associated with indoor air quality, by _____	• Number of licensed facilities free from hazards	

[1] Note: Saskatchewan Provincial Health Council Annual Report 1995 – 96 (some recommendations in this report related to Goal Areas 3 & 4[and other goal areas] – drinking water quality, rental properties, workplace wellness, hazardous household wastes, toxic air pollutants, carbon monoxide

Key Partners

Local Building Officials where they exist; Saskatchewan Labour; various associations such as Saskatchewan Outfitter Association, recreational facility associations, hotel/motel associations, Saskatchewan Environment and Resource Management. Municipal Affairs and Housing will have the lead role in several areas of safety because it oversees or administers key pieces of legislation related to fire safety, building safety, amusement ride safety and others. The departments of Education and Social Services will have lead roles in areas of schools and childcare facilities, respectively.

Rationale

Public accommodations are governed by legislation in Saskatchewan and subsequent regulations. Examples include the Public Health Act 1994 and Public Accommodation Regulations.

Number of People Affected

Accommodation, public facilities and gathering places have the potential to impact the health of all residents of the district including visitors, transient and non-transient workers etc.

Shelter is one of the basic human needs and a key determinant of well being[2]. Visitors to the health district are entitled to have accommodation that meets a minimum standard, which include building standards, safety standards and a safe and adequate supply of potable water/sewage disposal.

Public buildings and services can be focal points and launching points of disease in the community (including day care centres and schools). Such buildings should provide as safe and healthy environment to workers and the public as is reasonably possible.[3]

The vast majority of children between the ages of 5 and 18 years (an estimated 150,000 children) in the province spend the hours of 9:00 AM to 3:30 PM in school environments. Thousands of children are in licensed or unlicensed day or child-care facilities. These environments need to be monitored for health and safety and disease prevention.

Thousands of tourists visit Saskatchewan each year[4] and Saskatchewan residents themselves travel throughout the province and utilize public accommodation facilities.

Similarly, many thousands of residents utilize public facilities and have a right to expect that these facilities will be reasonably safe and free from other hazards.

Seriousness/Impact on Population

These facilities can have a serious impact on the population. A water system at a public accommodation, which is not operating to meet minimum standards of filtering, chlorinating, and retention time, has the potential to cause illness. Water borne diseases include hepatitis A, Shigella, Giardiasis, rotavirus, and others. These are preventable with correct water treatment. There are potential safety hazards including carbon monoxide, accidents and injuries. There are many hundreds

[2] Municipal Affair Culture and Housing Strategic Plan 2000 - 2001
[3] See Occupational Health and Safety Act and Regulations; Public Health Act & regulations
[4] Tourism Saskatchewan December 12, 2000 Research Department

of public accommodations and public facilities in the province. The potential to cause illness in the district population and the travelling public is real. The types of communicable diseases, potential accidents and injuries vary with the type of facility.

Constant vigilance is required to ensure that standards are maintained in all public facilities and to be aware when new health impacts develop. The role of the health district may range from educational, monitoring, or enforcement depending on the type of facility and the risk factors involved.

Modifiable Risk Factors

The public is dependent on a variety of agencies to ensure that public accommodation and facilities meet a minimum standard of health and safety. The owner and operator of such facilities have the prime responsibility. Building and facility standards exist in many cases because of potential health and safety hazards. Access to inspection agencies is limited in rural Saskatchewan with the health district staff often being the only front line inspection staff available. Therefore, it may be left by default, to the health district to be aware of the modifications that need to be done at specific public accommodations and facilities to promote public health and safety.

Evidence-based Strategies

There is an expectation on the part of the public that various enforcement agencies will advocate on their health and safety. They expect a safe and healthful public accommodation and safe and healthy public facilities. Public health strategies to promote safe and healthy environments in these facilities include promotion through education, inspection, and monitoring and if necessary enforcement of The Public Health Act 1994 and various regulations.

Sometimes it is necessary to think beyond the tools that are provided through regulations and supportive data. "While we realize that human activities may involve hazards, people must proceed more carefully than has been the case in recent history. Corporations, government entities, organizations, communities, scientists and other individuals must adopt a precautionary approach to all human endeavors."[5] (Scientists, philosophers, lawyers and environmental activists, reached agreement on the necessity of the Precautionary Principle in public health and environmental decision-making. The key element of the principle is that it incites us to take anticipatory action in the absence of scientific certainty.) Therefore, health districts must be anticipatory of potential health and safety hazards in public accommodations and public facilities.

In order to reduce the risk of injury and disease associated with accommodation and public facilities, health districts must be prepared to be vigilant. The role of the district will vary depending on the type of accommodation and facility; the health district may also need to provide anticipatory action in some circumstances.

Consequences of Not Responding

The consequence of not responding may result in increased levels of accidents, injuries, disease and possibly death associated with public accommodation and facilities. Many of these incidents will be

[5] Johnson Foundation, Wingspread Consensus Statement on the Precautionary Principle, January 1998. www.flora.org/flora.mai-not/2166

preventable and represent an unnecessary impact on personal quality of life and burden on the health system. The situation in Walkerton affirms the need for constant vigilance.

References

Public Health Act, 1994.

Public Accommodation Regulations

Itinerant Accommodation Guidelines

Public Health Inspection Policy and Procedure Manual

Bryant, Malcolm. Medical Health Officer Health Region #12. Draft Discussion Paper: "Establishing a Baseline for Health in A Health District. October 1993.

Northern Saskatchewan Regional Training Needs Assessment Report

World Health Organization. "Report of a WHO Expert committee on Housing and Health." Technical Report Series, Geneva 1974.

4. Promote access to quality, affordable, and safe housing.

Objective	Indicator	Evidence-based Strategies
• By _____ identify the set of indicators that define quality, affordable, and safe living accommodations	• Existence of indicators	• Use of staff trained in investigations, surveillance, monitoring, enforcement, public health risk analysis and risk communication
• By _____ the number of households living in substandard houses will be reduced by _____%	• Number of households living in substandard houses	• Use of The Public Health Act,1994 – references to National Building and Fire Codes and model housing codes such as the one developed by the American Public Health Association.
• By ____ the incidence of _____(choose among lead-based paint poisonings, absence of smoke alarms, poor indoor air quality, burns, etc) will be reduced by ___%.	• Incidence rate	• Partnership with local housing authorities, Saskatchewan Housing and other housing agencies in the province • Advocate on behalf of silent voices in communities - the homeless and people in substandard housing
• By _____ _____% of communities will be protected by minimum health and safety standards for residential shelter (i.e. housing code)	• Existence of standards and number of communities meeting standards	• Utilize education, community development and health promotion approaches that complement regulatory approaches • Work with municipalities on land use issues, particularly as they relate to housing. Encourage the striking of housing committees that report to council
• By _____ district will assist in an education program for low income, problematic families on housing maintenance and health, disease and accident prevention information	• Existence of a program in which health district participates	

Key Partners

Local municipal building departments and housing agencies. Other departments such as Municipal Affairs and Housing and Social Services may have the lead role respecting safety (e.g. fire and building safety) and supportive housing.

Rationale

The shelter environment and related services, facilities, devices and equipment are necessary for the physical, social and mental well-being of families and individuals.

Number of People Affected

Shelter is one of the basic human needs and a key determinant of well-being[6]. All residents in the health district are impacted by their housing either positively or negatively. Housing must meet a minimum standard, which includes building standards, safety standards; a safe, adequate supply of potable water, and approved sewage disposal. "There is no doubt that the housing problem is one of the most complex issues facing society today, encompassing social, economic, political and health factors. Housing shortages...Increasingly, health departments are being asked to deal with housing issues.[7] Healthy Environments (of which housing is a component) is a key health promotion mechanism.[8]

Seriousness/Impact on Population

"Studies dating back to the nineteenth century have shown a relationship between unsanitary conditions, overcrowding, inadequate health and light, and poor ventilation and health problems involving the transmission of diseases and infections. Examples of adverse health and safety conditions that have been associated with individuals living in substandard housing are:

i) Rat and insect bits
ii) Domestic animal bites
iii) Skin infections
iv) Respiratory diseases and allergies
v) Burns from fires
vi) Accidental injuries such as falls
vii) Carbon monoxide poisoning
viii) Pesticide poisoning
ix) Lead poisoning

"... housing improvement is essential in upgrading overall health statistics."[9]

Poor housing has the potential to impact the health of district residents in a variety of ways. Affects range from physical effects such as asthma, facilitating the spread of diseases such as tuberculosis or exacerbating disorders such as arthritis due to inconsistent temperatures, humidity etc. There can be social effects due to the stigma of living in poor accommodations or overcrowding (multi-general families in a dwelling designed for a single family). Social effects may escalate to family violence and other social impacts on the community at large.

Modifiable Risk Factors

People living in substandard or inadequate housing are subject to risks, which are preventable. People in rental accommodation in a tight housing market have less ability to modify their circumstances.

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[6] Municipal Affair Culture and Housing Strategic Plan 2000 - 2001
[7] Association of Supervisors of Public Health Inspectors (Ontario). Discussion Paper, "The Role of the Local Health Department in Environmental Health and the Nineties and Beyond", *Environmental Health Review*, Spring 1991, page 12.
[8] Epp, Jake, Achieving Health for All: A Framework for Health Promotion, Ottawa: National Health and Welfare, 1986, p.8.
[9] Association of Supervisors of Public Health Inspectors (Ontario)... page 12.

Evidence-based strategies

Poverty, poor housing and poor health are often inter-related. "The rich are healthy; the poor are not." [10] Quality of life and environment (housing) is a key component of the Healthy People Continuum.[11]

It is estimated that our health care system has about a 25% influence on our health. 75% of our health is impacted by factors outside the health care system.[12] Minimal housing standards are outside the usual health care system, however, the health district can be a key partner in advocating for this within the district and providing the necessary educational/health promotion messages to the public and policy makers.

Adoption of building and housing codes and the striking of housing committees will allow municipalities to focus attention on housing issues. Morris Schaefer (as reported on page 1178 in Salvato's Environmental Engineering and Sanitation - 4th edition) has identified the following principles of health action:

1. Alliance with other concerned groups, at all levels of administration and through multiple channels and media
2. In the government sphere, health advocacy should be directed at a broad range of policies
3. To implement socially desirable policies, health advocacy should be intersectoral in its orientation; moreover, it should be integrated into the technical and social processes that countries use to develop and maintain community resources
4. For policies and standards to be effective, extensive public and professional education is required to promote the provision and use of housing in ways that improve health status
5. Finally and emphatically, community involvement at all levels should support self-help, neighbour-help, and communal cooperative action in dealing with the needs and problems of the human habitat

The collection and analysis of relevant information is necessary to identify the extent of the problem and outline possible intersectoral solutions. Information on the following will be helpful:

- average income in health district per capita;
- # of houses versus population income per household;
- # social housing units per capita; # homeless people;
- # of multiple families in one dwelling;
- # of transitional housing units to provide shelter for the homeless and prevent homelessness among high risk groups;
- # of shelters and # of shelter beds;
- # dollars aimed at housing and housing repair through Sask Housings network of community based housing agencies;
- # of available units; variety of units available apartments, houses, other[13];
- # of housing units constructed per year; # of housing units in poor repair not meeting minimum standards.

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[10] The Lancet, Volume 345, Number 8957, April 29, 1995

[11] US Department of Health & Human Services. Educating Environmental Health Science & Protection Professionals – Problems, Challenges & Recommendations. Association of Schools of Public Health Washington, D.C. May 5, 1991.

[12] Population Health Promotion Model: A Resource Binder C-9 Determinants of Health – Health Services C-9.4

[13] Healthy Cities "A healthy city means…citywide affordable housing in safe neighborhoods, free from discrimination. Planned assistance and transitional housing is needed for persons with no shelter."

Consequences of Not Responding

The cost of not responding to the promotion of access to quality, affordable, and safe living accommodations includes costs in the:

- health care system related to disease and injury treatment
- social-welfare system related to family break up and interactions with police and the legal system

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Environmental Engineering and Sanitation, 4th edition, Joseph Salvato

5. Reduce the risk of injury and disease associated with environmental hazards related to noise, pesticides, radiation, and other toxicants.

Objective	Indicator	Evidence-based Strategies
By _____ establish baseline data for noise related injuries. By _____ reduce the # of noise related injuries by ____ % By ___ establish baseline incidence rate for skin cancer. By _____ reduce incidence of skin cancer by ___ % By ___increase to at least ___% the proportion of homes in which home occupants have tested for radon concentrations and that have either been found to pose minimal risk or have been modified to reduce risk to health. By ___establish baseline data for exposure incidents relating to the following 3 major toxicants (district chooses among agricultural, industrial, and residential toxicants). By ____reduce the number of exposure incidents of _____(identify the three mentioned above) by ____ % By _____ the district will have a program that responds to complaints involving chronic exposure to toxicants and other environmental hazards By ___establish baseline data for illnesses hospitalizations caused by stubble and straw burning. By ____reduce illness hospitalization caused by exposure to smoke from straw and stubble burning by ____%.	Existence of baseline data. Hearing loss statistics from exposure to high noise levels Existence of baseline data # of cases of skin cancer % of homes tested for radon % modified or posing minimal risk. Existence of baseline data # of exposure incidents Existence program Existence of baseline data. Hospital/doctor visits following exposure to smoke	• Use of staff trained in investigations, surveillance, monitoring, enforcement, public health risk analysis and risk communication • Involve participation of communities, clients and industry in the development of standards and guidelines • Seek agreements with other agencies to minimize duplication of services • Use of environmental health standards and guidelines developed nationally or by other provinces or states • Utilize education, community development and health promotion approaches that complement regulatory approaches • Collaboration with other agencies (e.g. Sask Ag and Food , SERM, Municipal Affairs, Culture and Housing, Occupational Health-Labour) and industry on environmental health issues • Participate in community land-use activities to obtain early recognition and consideration of environmental health issues • Support research activities in the area of environmental and ecosystem health. • Be proactive in response to potential hazards e.g. electromagnetic radiation, cell phones, etc.

Key Partners

Saskatchewan Labour (Occupational Health), Saskatchewan Environment and Resource Management, Saskatchewan Ag and Food, municipalities, school boards, farm organizations, industry.

Rationale

Environmental hazards are controlled in Saskatchewan by the Public Health Act 1994 and other legislation administered by other Departments such as SERM.

Number of People Affected

Everyone is potentially exposed to environmental toxicants that may exist in out/indoor air, soil, water, food and other media forming part of residences, communities, agricultural and industrial or occupational settings.

Everyone is potentially exposed to toxicants in residential air and in the air inside public buildings. Common use of pesticides and fertilizers for garden and lawn care in urban settings creates many opportunities for exposure. Further, the possibility of being exposed to pesticides increases in an agricultural province like Saskatchewan, which in 1996 had a farm population of 140,345.

Hearing loss afflicts approximately.28 million people in the United States. Approximately 10 million of these impairments are at least partially attributable to damage from exposure to loud sounds.

More that 20 million Americans are exposed on a regular basis to hazardous noise levels that could result in hearing loss. The Environmental Protection Agency, Office of Noise Abatement & Control (1981) provides the following statistics.

Employment area	Total employed	Number exposed ≥ 85decibels
Agriculture	3,600,000	323,000
Mining	957,000	400,000
Construction	4,644,000	513,000
Manufacturing & Utilities	21,781,000	5,124,000
Transportation	4,345,000	1,934,000
Military	38,346,000	9,270,000

Approximately 90% of farmers are at risk of noise induced hearing loss. 60-80% of farmers between the ages of 30 & 70 were found to have significant hearing loss which could be attributed to exposure to farm noise. (study conducted in Australia)
Half of all farmers over the age of 50 have greater that 50% hearing loss (results of the 1994 Nova Scotia Farm Health & Safety Survey)

Everyone is exposed to high UV light levels during summer months. Occupational and recreational exposure can be prolonged and unprotected. Tanning beds continue the exposure risk into the winter months.

Saskatchewan and Manitoba have the highest levels of radon gas in Canada. Everyone is exposed to some level of radon with dosage dependent on location.

Everyone is potentially at risk of exposure to smoke from stubble burning. Persons with chronic lung disease such as asthma are at increased risk of injury from stubble burning. Stubble burning around large population centers allows for exposure of many thousands at a time. A Winnipeg study has indicated that stubble smoke causes a 4% increase in use of prescription drugs, 2% increase in physician contact. The smoke bothered 42% of people exposed and a further 20% had breathing trouble.

Seriousness/Impact on Population

Modern lifestyles and housing construction allow for the potential of toxicants to cause injury or disease in residences and public facilities. Sealing of houses from drafts can give rise to the potential of injury or death from exposure to toxicants such as carbon monoxide. Modern furnishings can produce hundreds of gases, which may impact individuals. Appliances, cleaning products, tobacco smoke can all add to the increase in indoor air pollution. Most people spend as much as 80 – 90 percent of time indoors which may be subject to chemical or biological contaminants.

In a presentation to the World Health Organization a group of specialists stated, "deafness can lead to significant reductions in the quality of life, impaired human relationships, reduced access to employment and diminished productivity". According to the Better Hearing Institute the annual cost of hearing loss in the US is $56 Billion.

Exposure to UV light is a primary cause of skin cancer, leading to extensive medical treatment and death. In 1998 there were 67, 000 new cases of skin cancer in Canada, compared to 20, 000 in 1980.

Exposure of radon gas can lead to the development of cancer, and in particular, lung cancer. It has been estimated that 5% of lung cancer cases in Canada are caused by radon gas exposure.

Most acute effects of pesticide exposure are well characterized, and the mechanisms of their pathogenesis have been established in many cases. Examples include acute exposures to organophosphate insecticides, organochlorines, carbamates, and pyrethrum and pyrethrins. Exposures can include occupational, accidental and intentional. Studies on long-term effects, which develop or persist long after the exposures that may have precipitated them, typically are less consistent in their findings and often raise more questions than they answer. The ability of pesticides to cause cancer, neurotoxicity, and adverse effects has been demonstrated in laboratory animals, but unambiguous clinical or epidemiological evidence of effects in humans, exists for only a few specific agents. Clinical or epidemiological data for most pesticides is a problem – either it is lacking on long-term health effects, or the data do not yet support clear evidence of causality.

Exposure to smoke from stubble burning can lead to emergency intervention, prolonged hospitalization, and even death. Around 10 percent of the population suffer with asthma (which is approximately 20,000 people in Regina Health District). The impact of exposure to smoke from stubble burning can be significant. Numerous studies have shown a positive association between daily mortality and particulate air pollution (American Journal of Epidemiology).

Modifiable Risk Factors

Risk factors for indoor air pollution vary from building to building. Inspection and monitoring in public facilities assists in the maintenance of good air quality.

Occupational Health & Safety (OH&S) regulations do provide for provision of hearing protection. However, employee reluctance to wear uncomfortable protection is a problem. Noise levels may be reduced and exposure times can be limited. Factors influencing injury can be related to socio-economic status and education levels. This is particularly true for hearing loss in newborns. Good prenatal care and proper treatment of premature births will impact hearing loss.

Using approved pesticides and following safety and application instructions is essential. Aerial spraying when wind conditions are calm and advising neighbouring residences and communities in advance of spraying has proven to be effective.

The use of proper sun protection can drastically reduce the risk of skin cancer from exposure to UV light.

The presence of radon gas, a by-product of uranium decay cannot be controlled. However, levels can be measured and construction techniques adjusted in problem areas. This can be achieved through increased ventilation and sealing of cracks in basement floors.

Regulation of stubble burning activities can reduce the risk of injury and disease from smoke inhalation. Reduction in stubble burning around heavily populated areas and regard to weather conditions and time of burning can influence exposures.

Evidence-based Strategies

- Inspection and monitoring of public facilities will help maintain satisfactory air quality and reduce the risk of exposure to airborne toxicants. Education of of public facilities operators will increase awareness of risk factors. Responding to public concerns by providing advice and information on the removal/prevention of indoor air toxicants can reduce the effects of exposure to environmental toxicants.

- Individual protection strategies: hearing conservation must begin by providing each individual with basic information on noise induced hearing loss

- Non-occupational strategies: hearing loss from non-occupational noise is common however public awareness of the hazard is low. Educational programs should be targeted toward children, parents, hobby groups, public role models and professionals in positions such as teachers, physicians, audiologists and other health care professionals, engineers, architects and legislators.

- Occupational strategies: hearing conservation programs for occupational settings including sound surveys to assess the degree of hazardous noise exposure, engineering and administrative noise controls to reduce exposures, education to inform at-risk individuals why and how to prevent hearing loss, hearing protection devices and audiometric evaluations to detect hearing changes.

- General strategies: implementing broader preventive efforts could reduce noise-induced hearing loss. Labelling of consumer product noise emission levels, incentives for manufacturers to design quieter industrial equipment and consumer goods, community ordinances for controlling environmental noise

(spectator events is an example). Prevention of noise induced hearing loss should be part of the health curricula in schools.

- Public education on the dangers of UV light exposure is an important factor in the reduction of skin cancer cases. Inspection and monitoring of personal service facilities to ensure proper usage and protection of tanning beds. Increasing awareness among the public of the signs of skin cancer, as nearly all cases of skin cancer are treatable if detected early.

- Testing homes for the presence of radon gas is the first step in preventing illness through exposure. Identifying areas of risk can ensure proper utilization of resources to prevent exposure. Educating the public to make them aware of radon gas concerns and having testing equipment readily available is an important process.

- A Public Health Approach:
  Clear communication about environmental hazards and risks is key to meaningful involvement of community residents, and workers, in risk management decisions. Risk communication is a field that has been well developed. These risk communication methods need to be more widely utilized, with a greater inclusion of involved communities in risk assessment and management processes, including risk communication. Environmental risk management, with integral involvement of stakeholders (including community representatives), has been proposed as an approach to improving these links.

  In order for broad stakeholder involvement to be successful, there is a need for education of the various parties involved. Some of the educational approaches that have been involved include parent education, school-based education of children, community outreach by specially trained (social) workers and nurses, community–based patient-physician alliances, and indigenous outreach workers who are members of the target community trained to educate their peers. An essential part of community awareness, is to establish a rapid response system whereby suspected exposures such as crop over-spraying, are reported immediately to the appropriate investigative agencies. In Saskatchewan, this would be the pesticide investigator from Saskatchewan Agriculture and Food. This would facilitate the risk assessment and management process, and would enable the community to have a strong input into the problem and its solutions.

  Use of education can change farming practices with regard to stubble management, i.e. chopping & spreading, harrowing, baling etc. Reduce risks associated with stubble burning – continual monitoring, wind direction, etc.

  Interagency cooperation with a view to development of regulations/bylaws to control burning practices.

Consequences of Not Responding

The consequences of not responding to these issues are an increase in injury and disease associated with these environmental hazards. In particular, serious illness/death associated with indoor air toxicants; acute exposure to pesticides, increased hearing loss; increased # of cases of skin and lung cancer; and increased illness, hospitalization and death from exposure to stubble smoke.

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6. To strengthen sustainable communities and the environment.

Objective	Indicator	Evidence-based Strategies
By ____ ____% of district public health staff, district health boards, and municipal councils will be familiar with the concepts of "sustainable community", "sustainable agriculture" and "sustainable development" and their relation to human health. By ____ the number of municipalities that have committed themselves (via resolution or public statements) to community sustainability will increase from ____ to ____. By ____ the district will partner with other agencies and municipalities to develop economic, environmental, and social sustainability indicators for use by communities. By ____ the district will host an environmental health conference to discuss and debate human health issues and local impacts related to (choose one or more from - climate change, ozone layer depletion, biodiversity, water scarcity, food insecurity, deforestation, desertification, urbanization, population growth, etc).	Number of staff, boards and municipal councils familiar with the concepts Number of municipalities passing resolutions or making public statements Existence of partnerships and sustainability indicators Existence of a conference	Build skills in and increase knowledge of district staff in the area of "broad environmental health" Utilize education, community development and health promotion approaches. Utilize other agency expertise for organizing community-based processes for sustainable community, environmental, social and economic development planning Seek support from professional associations having a broad interest in environmental health – e.g. Canadian Institute of Public Health Inspectors (Sask Branch), Saskatchewan Medical Association, Saskatchewan Public Health Association Sustain and increase momentum by building on current environmental initiatives already established by local governments and facilitate greater transfer and exchange of current expertise and information

Key Partners

Saskatchewan Health, Labour (Occupational Health), Saskatchewan Environment and Resource Management, Saskatchewan Ag and Food, Municipal Affairs, Culture and Housing, municipalities, school boards, farm organizations, aboriginal groups, industry, environmental groups, professional associations.

Rationale

Number of People Affected

The effects of a degraded environment affect everyone. Like all living things, humans exist entirely within the environment. Our basic requirements like air; food and water come from the environment, as do the energy and raw materials for housing, transportation and other products we depend on. The more serious the disruption or dislocation of the environment, the more significant the adverse affects to humans and other life forms.

Seriousness/Impact on Population:

J. McMichael in his book, Planetary Overload, identifies the following possible adverse human health effects due to global environmental change:

- Enhanced greenhouse effect causes global warming and other climate change which leads to heat wave related illness and death, more natural disasters (cyclones, floods, landslides, fires) extension of vector-borne infections, altered viability of (edible) fish in warmed oceans. Global warming will also increase sea levels leading to an increase of flash floods and surges that will impair sanitation, resulting in lost farmland and destruction of wetlands.
- Stratosphere ozone depletion will result in increased UV-B flux at earth's surface that leads to more sunburn, conjunctivitis, skin cancer, cataracts, pterygium, and suppression of immune system resulting- in more infections. Further consequences include growth impairment to food crops and marine microoganisms (base of aquatic life).
- Acid aerosols (from burning sulphurous fossil fuels) will cause acid rain, which may have some effects on respiratory health. Aquatic damage with reduced fish and crop growth impairment can be expected. Also impaired forest growth will result in reduced ecosystem productivity.
- Land degradation (intensive agriculture, overgrazing) leads to erosion, sterility, nutrient loss, salinity, desertification and depletion of underground acquifers. This in turn leads to decline in agricultural productivity (with rural sector depression implications) which may result in greater exposure to pesticides and fertilizers (may cause algal blooms). Less water will be available for drinking and hygiene.
- Loss of bio-diversity will result in loss of habitat and potential source of edible species. Loss of genetic diversity and weakening of ecosystems leads to loss of medicinals, and other health supporting materials. There will be greater vulnerability of crops and livestock.
- Effects of overpopulation (particularly in poor countries) include proliferation of crowded urban slums (due to migration and high fertility) which leads to infections, malnutrition, homelessness, antisocial behaviors.

Modifiable Risk Factors

The following list includes some factors that contribute to unsustainable community and/or degraded environment:

- Over consumption
- Choice in consumption mix (e.g. buying product from afar rather than locally, using product from non-renewable resources when renewable alternatives are available)
- Lack of or little commitment to 3 R's (reduce, recycle, reuse)
- Lack of institutionalized or system supports for subsidizing and promoting public transit, creating walking and cycling paths, subsidizing renewable energy alternatives, promoting conservation of water and energy, etc.
- Undervaluing the costs of waste disposal, pollution, deforestation, unsustainable agriculture, non-renewable energy, etc.

Evidence-based Strategies

As part of its effort to promote sustainable communities or healthy environment the health district can set an example by using processes, practices, materials, products or energy that avoid or minimize the creation of pollutants and waste, and reduce overall risk to human health or the environment. In changing attitudes and behaviors a crucial first step is outlining the benefits of environmental protection. The Canadian Council of Ministers of the Environment lists the following benefits of pollution prevention, an important element of sustainability: minimizes or avoids the creation of pollutants; avoids the transfer of pollutants from one medium to another; accelerates the reduction and/or the elimination of pollutants; minimizes health risks; promotes the development of pollution prevention technologies, uses energy, materials and resources more efficiently; minimizes the need for costly enforcement; limits future liability with greater certainty; avoids costly clean-up in the future; and promotes a more competitive economy.

It is important for the district to seek alliances with other agencies that have an interest in promoting sustainability. It can also encourage governments (municipal, provincial, national, aboriginal) to review and increase use of their public policy instruments (legislation, economic incentives, and moral persuasion).

Concerns have been raised about the heavy use of pest control chemicals and their impact on the environment and human health. In response to these concerns, Integrated Pest Management (IPM) has been widely promoted. IPM, as defined by the National Coalition on IPM in January 1994, is a sustainable approach to managing pests by combining biological, cultural, physical and chemical tools in a way that minimizes economic, health, and environmental risks. Districts can play a role in supporting IPM in Saskatchewan.

The Rio Declaration on Environment and Development (Brazil 1992) endorsed the "precautionary approach" for protection of the environment. The approach/principle says that when there are threats of serious or irreversible damage, lack of conclusive scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation. Since the principle is paramount to environmental protection, districts should increase its awareness among municipal councils, district boards, schools, industry, non-government organizations, and the public.
Districts also have a role in participating in the development of community sustainability indicators. Without indicators, progress on sustainability can not be measured.

Consequences of Not Responding

The consequences of not responding to environmental or sustainability issues can be catastrophic, particularly if degradation to the environment causes a substantial reduction in food and water supplies. See section on Seriousness/ Impact on Population for listing of potential consequences.

References

Planetary Overload, A.J. McMichael, Cambridge University, 1993

Pollution Prevention, A federal strategy for action, Government of Canada, 1995

Community Animation Project - various material

Guide to Sustainability Indicators, Maureen Hart, Hart Environmental Data, 1999

Basic Environmental Health (draft 1997 publication by Yassi, Kjellstrom, Kok, Guidotti)

Canadian Public Health Association, 1999 Resolutions and Motions

Global Scientific Consensus, David Suzuki Foundation

Toward a Health Future, Health Canada

Climate, Ecology, and Human Health, Paul Epstein

7. Reduce the risk of injury and disease related to hazardous waste, biomedical waste, liquid and solid waste.

Objectives	Indicators	Evidence-based Strategies
• By _____ reduce frequency and duration of exposure of the population to specific hazardous waste in the community by _____	• proportion of population in Health District exposed to levels of specific hazardous waste that exceed acceptable concentrations • proportion of defined at" risk population" in the health district exposed to levels of specific hazardous waste that exceed acceptable concentration • mortality and morbidity data regarding exposure to hazardous chemicals	• population health promotion strategies (community mobilization, development, advocacy) • health district involvement in land use/development • research, morbidity /mortality data re chronic disease related to environment (cancers, type, rate, clusters etc) • action to identify, monitor and remediate or secure contaminated sites
• By _____ reduce the frequency of exposure to biomedical waste by _____ • By _____ reduce the number of incidents by _____and reduce the incidence (rate) of communicable disease due to exposure to Biomedical wastes by _____	• number of incidents of exposure to biomedical wastes in the health district • number of incidents of expose amongst health district staff • number of intervention incidents in the health district due to exposure (public and staff) • inventory of the number of locations that generate biomedical wastes in the health district • proportion of "biomedical waste generators "in the health district who comply to guidelines • proportion of biomedical transport or disposal companies complying with guidelines	• population health strategies • data collection and analysis • inspection/enforcement programs • advocacy for funding standard-education of population
• By _____ reduce incidence rate of water borne disease by _____ • By _____ reduce contamination of soil and water (ground and surface) due to domestic, industrial, agricultural and urban liquid waste disposal	• rate of enteric and water borne disease in the population • communicable disease monitoring and comparison with data from other jurisdictions • monitoring of effluent discharge quality (compliance with accepted standards) , monitor	• legislative control of systems (domestic, industrial, agricultural and urban) • monitoring of effluent discharge volumes, quality and compliance with established standards • investigation of enteric and water borne disease • monitoring of communicable disease control data

	chemical parameters and frequency of compliance/exceedance	
• By _____ reduce incidence of injury and disease due to solid waste by _____ • By _____ reduce health risks due to generation, handling and disposal of solid waste • Promote reuse/reduce/recycle in the population of the Health district by _____ (crossed reference with Issue Goal "Strengthen Sustainable Communities and the Environment"	• Rate of mortality/morbidity due to exposure to solid waste generation, handling and disposal • Proportion of waste disposal sites that comply to acceptable standards (secure landfill vs dump) of location, operation, monitoring and control of emissions • Proportion of population served by acceptable landfills • Proportion of population adversely impacted by solid waste facilities and number of complaints received	• monitoring of communicable disease data • health promotion activities to promote reuse/reduce/recycle • health promotion activities to promote sustainable development and use of resources • advocate for establishment of programs to control development operation and decommissioning of waste disposal facilities

Key Partners

Saskatchewan Environment and Resource Management, Saskatchewan Labour (Occupational Health), Saskatchewan Water Corp, municipalities, SAHO, Saskatchewan Health

Rationale

Hazardous waste is controlled by legislation in Saskatchewan by the Public Health Act 1994 and the Sanitation Regulations. There is also other legislation administered by other Departments such as SERM.

Number of People Affected

All residents of the health district are or can be affected by the wastes generated, handled, transported treated and disposed of in their community. Children are more susceptible due to their larger intake of soil and relatively small body mass.

Seriousness/Impact on Population

- The physical environment is an important factor as a determinant of health. Wastes of all types that are generated by a community will impact and accumulate in soil and water (either underground or surface water bodies). Soil is considered to be the " ultimate receptor " for contaminants, including air borne contaminants since chemicals can be adsorbed by particulate matter and will eventually be deposited onto the ground surface or as sediment in surface water.
- Contamination in soil or water (ground and surface water) can impact human health, through direct contact (ingestion, inhalation or dermal absorption) or indirectly through migration of contaminants into drinking water supplies, absorption of contaminants by plants and resultant bio-accumulation in the food chain.
- The volumes of waste generated may impact human health and the environment if "unsustainable development" exists or is allowed to proceed. The "ecological foot print" is a measure of a nation's

use of land and water to create the resources it consumes and absorb the waste it generates. In 1993 Canada's footprint was 7.0 hectares per capita, globally only 1.7 hectares per capita exist and over the next 30years this available resource will shrink to 1.0 hectare per capita globally. Clearly we are utilizing resources in a manner that is not sustainable.

- Over the past 30 years the incidence of cancer has increased in the Canadian population, although a small portion of these cases are believed to be attributable to environmental causes (one study by the Harvard Center for Cancer Research estimated 2%), environmental contaminants and other factors (e.g. radon gas exposure and tobacco smoke), may have a synergistic effect.

Modifiable Risk Factors

- The exposure pathways of contaminants may be direct contact and indirect exposures (where contaminants have impacted soils and water and ultimately the food chain or indoor air quality). Actions that reduce either type of exposure could be implemented to reduce risks.
- Specific strategies could include "Recycle, Reuse, Reduce or Energy Recovery" to minimize volumes of wastes generated, use of technology to treat wastes to reduce hazards, disposal locations that prevent leaching, land use restriction/approval processes to minimize exposure and consideration of the issue of sustainability when reviewing new industrial/agricultural or commercial projects. Ongoing surveillance of disease rates, monitoring/auditing of waste streams and developing standards for handling/disposal of wastes are also activities that could reduce exposure.

Evidence-based Strategies

- Substantial research exists on specific contaminated sites (site identification) and new standards released by the Canadian Council of the Ministers of Environment (the Canadian Environmental Quality Guidelines, 1999) establish guidelines for soil quality, the protocol used to develop the guidelines and general guidance for site specific soil quality remediation objectives.
- The Canadian Water quality Guidelines and the Canadian Drinking Water Quality Guidelines establish standards for parameters to ensure water is safe for use. This document contains information on specific parameters and the risk assessment data that is used to establish safe (no adverse effect levels) of the specific chemical in water. Recommendations for water treatment are included.
- The Saskatchewan Biomedical Waste Management Guidelines and the Guidelines for the Management of Biomedical Waste In Canada establish categories of waste, the risk associated with the waste and the appropriate method of storage, transport, treatment and final disposal of the waste.
- Federal, provincial and municipal legislation may exist to establish standards for general waste disposal, however legislation does not deal with all aspects of waste handling nor wastes generated by agricultural, industrial, or commercial activities that may be unique to a geographic area of the province (e.g. crop residue burning, mining waste, forestry, intensive agriculture or biomedical waste issues from a large urban center). Health districts may have to assess risks that are unique to their respective area, develop programs that address risks and evaluate outcomes of the delivered programs.
- The cost of disposal of wastes must be factored into the cost of development so that public funding of cleanup does not strain the communities' resources.

Consequences of Not Responding

Increased morbidity or mortality may occur as a result of inaction and costs of treatment /acute care will have to be addressed.

References

Guidelines for the Management of Biomedical Waste in Canada, Canadian Council of Ministers of the Environment, CCME EPC-WM-42E , February 1992

Saskatchewan Biomedical Waste Guidelines, Sask Health, Sask Labour and Sask Environment and Resource Management, April 22/1998

Conserving Saskatchewan's Natural Environment, Sask Environment and Resource Management, August 2000

Health and the Environment, Hand book for Health Professionals, Health Canada and Ontario Ministry of Health, H46-2/98-211E, 1997

Toward a Healthy Future, Second Report on the Health of Canadians, Federal, Provincial and Territorial Advisory Committee on Population Health, H39-468/1999E, 1999

A Vital Link, Health and the Environment in Canada, Minister of National Health and Welfare, H21-112/1992E

Canadian Environmental Quality Guidelines, Canadian Council of Ministers of Environment, ISBN 1-896997-34-1, 1999

Canadian Water Quality Guidelines, Canadian Council of Resource and Environment Ministers, 1996

Canadian Drinking Water Quality Guidelines, Health Canada, H48-10/1996E, 1996

Environmental Engineering and Sanitation, Fourth edition, Joseph A. Salvato, ISBN 0-471-52377-

Basic Environmental Toxicology, Lorris G. Cockerham and Barbara S. Shane, ISBN 0-8493-8851-1

8. Reduce the risk of morbidity and mortality related to disasters that occur in a community by planning, coordinating, implementing and evaluating emergency measure activities.

Objectives	Indicators	Evidence-based Strategies
By _____ the health district will establish an emergency plan to deal with their own and their affiliate buildings and facilities By ___ the district emergency plan will familiar to ___% staff. By ___ the district emergency plan will be reviewed, tested, and updated annually.	• Existence of a plan • % of staff familiar with plan • Existence of annual reviews tests and updates.	• a written plan must be developed and circulated to staff • positions must be identified and specific duties must be assigned • health districts should establish an "Incident Command " model since this model will link with other agencies EMO structures • staff must be oriented to the plan and exercise the plan on a regular basis • ongoing evaluation is critical to ensure the plan is relevant and stays current
By _____ the health district will actively consult with and coordinate emergency planning activities with municipal authorities, mutual aid organizations and provincial emergency resource centers (PERCs) or other such organizations	• Existence of an active coordination program.	• the health district must have input into municipal emergency planning • the health district must coordinate their own plan with the municipal plan to optimize health care services provided to the population • the health district must appoint assign emergency planning responsibilities to a specific part (department) of their organization

Key Partners

Municipalities, Saskatchewan Health, Sask Environment and Resource Management, Municipal Affairs, Culture and Housing (Emergency Preparedness), Social Services, Sask Water Corporation, Sask Education, school boards, NGOs, and business/industry.

Rationale

Number of People Affected

All residents of the health district can be affected by a disaster in the community or an emergency in a health district facility.

Seriousness/Impact on Population

Disasters can be a result of "natural" events (e.g. tornadoes, winter storms, forest fires etc) or can be a result of human activities (e.g. building fire, bombing, major transportation accident such as an airplane crash etc.). A disaster may affect a relatively small number of people in a confined area (building fire) or affect the population at large (flooding). Mortality and morbidity may be due directly to the event or

may escalate to include the risk of communicable disease due to failure of services (water treatment), over crowding in shelter facilities or lack of adequate and safe food.

Modifiable Risk Factors

Effective planning for the most probable types of disasters that could affect a community involves assessing the types of risks that could occur (most probable events) and establishing a plan to identify, locate, mobilize and coordinate the necessary resources to respond to the needs of the community. Often the key to successfully dealing with emergency response is the need to coordinate resources that exist within a community. Planning the use and coordination of resources and clarifying roles and authorities in advance of a disaster will optimize the community's ability to respond to the event.

Evidence-based Strategies

Experience in and evaluation of disasters has shown the need for planning in advance. Leaders in the community and the organizations involved must be trained and familiar with the process of coordinating emergency response.

Consequences of Not Responding

Increased mortality and morbidity may occur as a result of failure to have a plan and skill in dealing with disasters.

References

The Canadian Fire Officer's Guide to Emergency Planning, Ron Kuban (Turning Point Consulting Group, 3116-36B Avenue, Edmonton Alberta, T6T 1H4 0 ISBN 0-9699417-1-4

Emergency Health Services Planning (Community) Course Manual, Health Canada

Emergency Preparedness Plan- (Health Incident Command System) Saskatoon District Health

GOAL AREA: INJURY PREVENTION

BROAD GOAL: To prevent/reduce injuries, disabilities and deaths due to unintentional injuries and violence.

In order to address the goal area successfully, health districts must work on the following issue goals.

ISSUE GOALS:

1. To decrease the incidence of farm related injuries.
2. To decrease the incidence of motor vehicle related injuries.
3. To decrease the incidence of injuries in children and youth.
4. To reduce the incidence of fall-related injuries in seniors.
5. To decrease community violence.

Health districts may choose from the following sample objectives, indicators, evidence-based strategies for each issue goal or develop their own to accommodate local needs and resources. Rationale for each issue goal is also included.

1. To decrease the incidence of farm related injuries.

Objectives	Indicator	Evidence-based Strategies
• By ____ reduce farm-related injuries & fatalities by ____%. • By ____ reduce farm-related injuries and fatalities in children aged 0-14 years by ____%.	• Rate of death and hospitalization due to farm-related injuries • Rate of death and hospitalization due to farm-related injuries in children aged 0-14 years	• Establish a dialogue with the farming community and experts in farm health and safety to utilize information on patterns of injury for logical and evidence-based development of priorities for prevention[i] • Farmers and their families require adequate resources to manage injuries, including First-aid & CPR training and access to prompt, skilled pre-hospital care from personnel trained in the management of the unique forms of trauma that occur on farms[i] • Explore safe guarding farm equipment, retrofitting older equipment and best practice models for farm machinery operators for the purpose of identifying opportunities to reduce or eliminate farm machinery hazards[i] • Develop practical methods of improving communication between lone workers and those who could come to their aid[i] • The frequency of occurrence of injuries resulting from exposure to farm animals and farm structures warrants consideration of the design of animal enclosures and other farm structures to identify and eliminate hazards and improve best practice models[i]
• By ____ increase awareness of lung damage caused by grain dust, moulds, intensive livestock and agricultural chemicals. • By ____ decrease the rate of lung disease in the farm population by ____.	• Rate of lung disease in farm population	• Make respirator use compulsory in intensive livestock operations[ii] • Use an oil sprinkling technique to suppress aerial dust production in pig barns[iii] • Coordinate lung testing for farm workers every 2-5 years • Test intensive livestock workers every 6 months or every 3months for longer-term workers
• By ____ reduce stress & violence in farm families.	• Frequency of family break up. • Frequency of physical & mental	• Social workers, mental health workers, financial planners and farm debt boards need to work

	abuse in farm families	together to really help farm families in crisis • Increase availability of social workers and mental health workers in rural Saskatchewan • Become familiar with and utilize the Saskatchewan Health Farm Stress Consultant
• By ____ reduce the incidence of hearing impairment in the farm population by ____. • By ____ reduce noise levels in farm machinery & install safeguards for the livestock industry.	• Incidence of hearing impairment	• Coordinate hearing testing for farmers • Promote hearing protection in hog barns • Promote the use of individual hearing protection

Key Partners

Centre for Agricultural Medicine, Saskatchewan Ag & Food, Farm Stress Line, Farm Stress Consultant, and Saskatchewan Labour Farm Safety Program.

Rationale

Number of People Affected

In 1996, the total farm population was 145,560 on 56,995 farms in Saskatchewan. This is 14.7% of the total Saskatchewan population.[iv] From 1990-1996, 147 work-related, fatal farm injuries and 2293 hospitalizations due to farm injuries occurred in Saskatchewan.[i]

The groups at highest risk for fatal farm injuries are:

- The farm operator
- Males of all ages
- Persons over the age of 60 years
- Children of both sexes

Approximately 90% of farmers are at risk of noise induced hearing loss. There is a trend for farmers 30 years of age to have hearing sensitivity slightly poorer than individuals not exposed to noise. By age 40, there is already significant high frequency hearing loss in farmers. As a result, many farmers have reduced hearing for soft tones such as speech and music. High frequency hearing continues to decline in farmers as the number of years without hearing protection increases.[v]

Seriousness/Impact on Population

Farming is one of the most dangerous occupations in Canada. Its hazards not only affect the farm operator but also the entire family who live, work and play in the workplace.

Modifiable Risk Factors

Hazards in the farm environment[VI] include:

- Machinery injuries
- Animal handling injuries
- Repetitive strain injuries
- Falls from heights
- Vegetable dusts and moulds, including grain dust
- Dusts and gases produced by animals when confined
- Agricultural chemicals
- Fumes from diesel fuel, welding, pain and solvents
- Stress
- Noise
- Collision during travel on rural roads
- Diseases like Hantavirus, transmitted from animals to humans
- Working alone

There are a number of Modifiable Risk Factors relating to injuries. Injuries are most often the result of predictable and preventable events. For example, the common causes of farm machinery related death are:

- being run over while jumpstarting tractor,
- extra riders
- obstructed steps
- no seatbelts
- absence of protective shields
- taking shortcuts
- fatigue
- driving too fast for the conditions
- high hitching
- driving on steep slopes
- improper loading of front end loaders
- improper use or lack of hazard lights
- improper use or lack of slow moving vehicle (SMV) sign
- not lowering equipment to avoid overhead objects.

Each of these causes is avoidable or modifiable. In fact, an Iowa study of tractor-related agricultural injuries concluded that a minimum of 64% of fatalities occurring from 1988-1990 were avoidable by utilizing already available interventions. These include the use of roll-over protective structures (ROPS) with a seatbelt and implementing the practice of not allowing extra riders on tractors.[VII]

Both noise levels and duration in noise are modifiable risk factors.

Evidence-based Strategies

Included in point form above.
Evidence-based Strategies for noise induced hearing loss include:

- Individual protection strategies: Provide each individual with basic information on noise induced hearing loss.

- Occupational strategies: Hearing conservation programs include sound surveys to assess the degree of hazardous noise exposure, engineering and administrative noise controls to reduce exposures, education to inform at-risk individuals why and how to prevent hearing loss, hearing protection devices and audiometric evaluations to detect hearing changes.

Consequence of Not Responding

Increased or continued injuries. Increasing number of farmers with noise induced hearing loss.

References

See end of injury prevention section

2. To decrease the incidence of motor vehicle related injuries.

Objectives	Indicator	Evidence-based Strategies
• By ___ reduce deaths due to motor vehicle crashes to no more than _____ per 1000. • By ___ reduce deaths caused by alcohol-related motor vehicle crashes to no more than _____ per 1000. • By__ reduce hospitalizations due to motor vehicle crashes to _____ per 1000. • By ____ reduce hospitalization due to alcohol-related motor vehicle crashes to no more than _____ per 1000.	• death rates from motor vehicle crashes • hospitalization rate due to motor vehicle crashes • alcohol-related motor vehicle crash death rate & hospitalization rate	• Implement comprehensive policies/programs for new drivers[viii] • Implement or advocate for the institution of graduated licensing systems[ix] • School-based programs produce positive attitude and behaviour change. Some programs show small self-reported behavioural change that did not persist over time[viii] • Multi-component approaches most promising[viii]
• By ___ increase use of safety belts to _____%. • By _____ increase proper use of child restraints to ____%.	• % of people wearing safety belts. • % of children properly restrained in motor vehicles	• Proper restraint systems reduce injuries[viii] • Legislation requiring the use of child restraints has been shown to be effective[viii] • Class education, social learning, and physician counselling all appear effective, but effects diminish with time[viii] • Selective enforcement programs which combine education and police reinforcement, are the recommended approach to promoting effective child restraint use.[ix] • Public Awareness campaigns of the necessity of seating children under the age of 12 in the back seat of vehicles with passenger-side air bags[ix]

Key Partners

Health, Education, Social Services, youth, community, SGI Traffic Safety Promotion, R.C.M.P., municipal police, Saskatchewan Highways & Transportation, emergency medical services (ambulances & first responders), driver education instructors, CAA and Saskatchewan Safety Council, Saskatchewan Road Safety Program, S.A.D.D., and traffic engineers.

Rationale

Number of People Affected

From 1989-1994 in Saskatchewan there were 170 deaths and 2,642 hospitalizations of children and youth under the age of 20 due to motor vehicle collisions.

Seriousness/Impact on Population

The above hospitalizations resulted in 13,886 days of stay in hospital.[X] A certain percentage of these injuries will also result in permanent disability with lifelong impacts on the individual and family members.

Modifiable Risk Factors

Most motor vehicle related injuries, like the majority of injuries, result from predictable and preventable events. The 1999 Saskatchewan Traffic Accident Facts indicate alcohol is a factor 42.7% of fatal crashes. In 1999, only 44.4% of people killed and 57.8% of people seriously injured were restrained. Young drivers continue to be over-represented in fatal and injury crashes.

Contributing factors are defined as those circumstances or factors that the reporting police officer perceives to have directly contributed to the collision or its severity. Factors fall into four categories: human condition, human action, vehicle condition or driving environment. Human condition is a more prevalent factor in fatal collisions (45%) than in all collisions (36%). Human condition and human action account for 69% of all factors in collisions, as compared to vehicular (25) and environmental (29%). The top ten contributory factors in fatal collisions during 1999 were:

- Alcohol involvement
- Driver inattention
- Road condition (surface or structure)
- Fail to yield the right of way
- Driver inexperience/confusion
- Driving too fast for conditions
- Extreme fatigue/fell asleep
- Weather conditions
- Traffic control device disregarded
- Exceeding speed limit.

Each of the above factors is modifiable through driver behaviour or road maintenance and repair.

Evidence-based Strategies

- There is a dramatic risk reduction associated with the use of child passenger restraint systems.[XI] An increase in the usage of child passenger restraint systems is positively correlated with passage of legislation mandating their use. [XI]
- Graduated licensing systems provide gradual access to driver's licenses by addressing novice drivers' chief risk factors for road injuries. Graduated licensing allows future drivers, as they accumulate driving experience, to acquire knowledge, develop their skills, and adopt responsible behaviour on the road. Restrictions designed to minimize novice drivers' exposure to risk are gradually lifted. [X]

- Develop multi-faceted approaches that are community based and prevention focused.

There is a strong relationship between motor vehicle related injuries and risk behaviour in youth. Strategies listed under decreasing the incidence of youth engaged in risk behaviour also decrease motor vehicle related collisions.

Consequence of not responding

Increased or continued injuries.

References

See end of Injury Prevention section

3. To decrease the incidence of injuries in children and youth.

Objectives	Indicator	Evidence-based Strategies
By ____, decrease the rate of hospitalization due to sport & recreations related injuries to no more than ____ per 1000.	• Rate of hospitalization due to sport & recreation injuries	• Mouth guards effective in contact sports [viii] • Wrist guards and elbow pads effective for in-line skaters [viii] • Preseason conditioning reduces the incidence and severity of high school football knee injuries [viii] • Multi-component interventions in Sweden and Seattle were found to be effective [viii] • Headgear effective for equestrian injuries [viii]
By ____, decrease the rate of hospitalization due to poisoning to no more than____ per 1000.	• Death & hospitalization rates due to poisoning	• Child-resistant packaging [viii] • Telephone stickers, cabinet locks, knowledge/possession of syrup of Ipecac improves safety behaviours [viii]
By ____, decrease to death rate due to scalds to no more than ____ per 1000. By ____, decrease the hospitalization rate due to scalds to no more than ____ per 1000.	• Death & hospitalization rates due to scalds	• Legislation paired with education re: settings on hot water heaters [viii] • Targeted approaches and tangible products such as providing thermometers found to be effective [viii]
By ____, decrease the death rate due to choking, suffocation & strangulation to no more than ____ per 1000. By ____, decrease the hospitalizaion rate due to choking, suffocation & strangulation to no more than ____ per 1000.	• Death & hospitalization rates due to choking, suffocation and strangulation	• Legislation and product modification critical in reducing deaths [viii] • Educational approaches had modest results with changes in knowledge, attitude and safety behaviours. Educational approaches are best used as an adjunct to legislative and technological approaches [viii] • Inform parents and caregivers of the danger posed by nuts, seeds and other firm foods, coins and latex balloons to children under five. Train parents and other caregivers regarding first aid for choking victims [ix] • Inform community and commercial organizations of the danger associated with latex

		balloons and discourage their distribution to young children[ix]
By ____, decrease the death rate due to drowning to no more than ____ per 1000. By ____, decrease the hospitalization rate due to near drowning to no more than ____ per 1000.	• Death & hospitalization rates due to drowning	• Physical barriers reducing access to pools and ponds [viii] • Legislative changes to regulate pool barriers have been estimated to significantly reduce drowning injuries, however, there has been research to show that many pool owners do not support legislation. Educational approaches are needed to raise awareness and create a climate supportive of legislation [viii]
By ____, decrease the death rate due to fire related injuries to no more than ____ per 1000. By ____, decrease the hospitalization rate due to fire related injuries to no more than ____ per 1000.	• Death & hospitalizations due to fire related injuries	• Passive interventions are the most effective for all burn types[viii] • Smoke alarms reduce the risk of death in fires by 86% and severe injuries by 88%. To be effective, alarms must be in good working order[ix] • Interventions aimed at product modification and legislation seem to have the most successful results [viii] For example, child resistant lighters, flame resistant materials for clothing. • Although knowledge may increase through health education, few studies show an increase in fire prevention behaviour [viii]
By ____, decrease deaths due to bicycle injuries to no more than ____ per 1000. By ____, decrease hospitalizations due to bicycle injuries to no more than ____ per 1000.	• Deaths & hospitalizations due to bicycle injuries	• The risk of injury can be reduced by as much as 78% through the use of bicycle helmets[xi] • Community programs using multiple strategies tend to be the most successful in increasing bicycle helmet usage[xi] • Legislation in combination with education is more effective than education alone [xi] • There is a significant cost/benefit to implementing bicycle helmet legislation [xi]

By ____, decrease the rate of hospitalizations due to falls for children and youth under the age of 20 years to no more than ____ per 1000.	• rate of death & hospitalization due to falls on playgrounds	• Lowering equipment height of playground equipment to less than 1.5 meters was found to be as effective as providing impact absorbing surfaces [viii] • Implement a multi-faceted, community based intervention including playground renovations, alternative activities and injury & violence prevention education [viii] • Aggressive playground behaviour can be reduced through a student-mediated conflict resolution program [viii] • Manufacturing children's clothing without drawstrings prevents strangulation injuries on playgrounds. [viii] • Removing bicycle helmets while playing on equipment. • Provide supervision on playgrounds (parental or teacher) • Ensure playgrounds meet CSA standards. • Maintain playground equipment and surfacing

Key Partners

Schools, Day Cares, The Canadian Red Cross, St. John Ambulance, Royal Lifesaving Society, Saskatchewan Safety Council, Local Safety Councils, Saskatchewan Institute on Prevention of Handicaps, Saskatchewan Acquired Brain Injury Partnership, Saskatchewan Coalition on Bicycle Safety, Department of the Fire Commissioner, Local Fire Departments, Municipal Police, R.C.M.P., Think First, & Saskatchewan Sports Medicine & Science Council.

Rationale

Number of People Affected

The Child Injury in Saskatchewan Report provides a comprehensive picture of injuries to Saskatchewan children and youth.[x] 68.8% of all deaths to children and youth aged one to 19 years were due to injuries. From 1989 to 1994, 540 Saskatchewan children and youth died as a result of injuries. The leading causes of injury deaths were motor vehicle traffic, self-injury and drowning & choking.[x]

From 1989-1994, 28,321 hospital admissions among Saskatchewan children and youth under 20 years of age were due to injuries. These hospital admissions resulted in 102,297 days of stay. The leading causes of injury-related hospitalizations were falls, motor vehicle traffic and sport & recreation. Hospitalizations increased with age and were more common among males than females.[x]

Injury statistics vary by age and gender. For children less than one year of age injuries accounted for less than 4% of all deaths. The leading cause of injury death was drowning or choking, while the leading cause of injury hospitalization was falls.

For children aged one to four years of age injuries accounted for 48.3% of all deaths. The leading cause of injury death was drowning or choking while the leading causes of injury hospitalizations were falls and poison.

For children aged five to nine years of age injuries accounted for 63.1% of all deaths. The leading cause of injury death was drowning or choking and the leading causes of injury hospitalizations were falls and cycling.

For children aged 10 to 14 years of age injuries accounted for 64.5% of all deaths. The leading cause of injury death was motor vehicle traffic and the leading causes of hospitalization were falls and sport.

For youth aged 15 to 19 years of age injuries accounted for 81.8% of all deaths. The leading cause of injury death was motor vehicle traffic and the leading causes of injury hospitalizations were motor vehicle traffic and self-injury.[x]

Seriousness/Impact on Population

Of eight industrialized countries, Canada has the second highest injury-related death rate for children and youth aged 0-19 years.[IX] Interestingly, since 1952, the injury-related death rates have decreased significantly for children under one year of age and decreased slowly and steadily for children under 14 years. Yet for 15-19 year olds, death rates increased from 1952 to 1973 and then decreased to reach a rate equivalent to that in 1952.[IX] Injury related hospitalizations show a similar trend.

Saskatchewan has the highest rate of injury-related deaths and hospitalization of all provinces.[IX]

Injury-related death rates by income quintile reveals the highest overall rate is for the poorest quintile.[IX] Some interesting variations occur. The highest rates for 10-14 year olds are found in both the highest and the lowest quintile with the lowest rates in the middle quintiles. The highest rates for falls and fires were in the lowest quintile, while the highest rate of suicide was in the middle quintile. The highest rate of drowning was in the middle quintile.

The highest rate of hospitalizations due to all injuries was again in the lowest quintile. The highest rate due to motor vehicle collisions was found in the highest quintile and due to motor vehicle/ pedestrian collisions in the lowest quintile. The highest rates of hospitalizations due to suicide attempts and assault, abuse and neglect were in the lowest quintile.

From 1989-1994 in Saskatchewan there were 10 deaths and 7,210 hospitalizations due to falls for children and youth under the age of 20 years. These hospitalizations resulted in 17,601 days of stay.[X]

Exploring new territory and engaging in new activities comes naturally to children regardless of age. Unfortunately, falls are known to be the result of some of these explorations. Patterns for fall injuries are associated with age. Infant mobility centres, playground standards, and home design all pose environmental risks.[XI]

Modifiable Risk Factors

As indicated previously, injuries are the result of predictable and preventable events. Each type of injury is associated with a particular pattern of Modifiable Risk Factors that include environmental, engineering and human factors.

Sport & Recreation Injuries: Each specific sport has its own injury risk factors related to the design of equipment, space and behaviour of participants.

Poisoning: Play is the principal activity of children below the age of five. Not surprisingly, more than 90% of poisoning occurred in conjunction with recreational activities. The toxicity of a produce and the size of dose, both affect the outcome in a poisoning incident.

Drownings: Drowning hazards in and around the home account for 53% of all toddlers' drownings. [xi]

Burns: Children aged one to 14 years of age are particularly vulnerable to burns due to such factors as: increasing mobility, independent play and exposure to risky activities that are beyond their skill levels. Older children are generally less vulnerable due to better developed hazard assessment skills and their ability to extricate themselves from, or deal with, dangerous situations. [xi]

Evidence-based Strategies

In order to prevent injuries, strategies must address behaviour as well as the physical and social environment in which injuries occur. There are four types of strategies that can be used to reduce risk of injury:

- Education focuses on raising awareness and providing information so that people can make informed decisions to reduce their risk of injury. Education should focus on changing attitudes and developing skills to increase a person's ability to act safely.
- Technological advances provide safer equipment and safety devices.
- Regulations are often enacted by Government departments that have the authority to govern the manufacture, sale and/or use of products. These regulations can require that safety devices be included in new products.
- Legislation is an important component of injury prevention. Most people are law-abiding. Therefore, most people will obey safety laws even if they do not fully agree with them. All levels of government have a responsibility to serve and protect the public.

Each of the above injury control strategies can be either active or passive. If a strategy is active, people must do something to protect themselves such as buckling up a seat belt or putting on a bicycle helmet. Driver and passenger-side airbags in vehicles, however, are passive strategies because people are automatically protected.

Strategies can also be compulsory or voluntary. Compulsory measures are those required by law or regulation, such as helmet laws for motorcyclists. Voluntary measures are those that people can choose to do or not to do, such as putting a lock on a medicine cabinet or taking a CPR course.

Passive compulsory strategies have been shown to be the most effective, because they do not require any action by the person who is being protected. The effectiveness of active voluntary measures, on the other hand, depends on individuals behaving in certain ways. [xiii]

Drownings: In the case of toddlers, developing walking abilities and a limited capability to assess danger make this age group particularly vulnerable to drowning. Pool fences are an effective method to prevent drownings and near drownings in children. Pool fencing needs to isolate the pool rather than be the boundary of the property on which the pool is located. The gate is the weak element of barrier fencing as failure to keep the gate closed renders the technology ineffective. [XI]

Burns: Legislation requiring new hot water heaters be pre-set at 49 degrees Celsius has been proven to decrease burns. A study found that implementation of legislation increased the number of homes with pre-set hot water heaters beyond what educational strategies alone could have achieved. [XI]

Poisonings: Children do not have the judgement to know that medications can be harmful and that house plants can be poisonous making them very vulnerable to poisonings. Safety packaging is effective in reducing the number and severity of unintentional poisonings. [IX] Limiting medication container size also reduces the hazard. [XI]

Bicycle injuries: A comprehensive bicycle helmet program with broad-based voluntary organization and governmental support should pay particular attention to rural and disadvantaged populations, both of which are high-risk, low-use groups. Legislative measures, educational/promotional programs, financial support and evaluation are essential components of such a campaign. [IX]

Falls: Falls from heights of less than one metre sometimes lead to very severe injuries. Counselling by primary care physicians is recognized as an effective way of improving parents' knowledge and behaviour with respect to safety. A home visit by a health professional can increase new parents' knowledge about the risk of injury, and also minimize hazards in the home. Postnatal visits are a good opportunity for this type of action. [IX]

Consequence of Not Responding

Increased or continued injuries

References

See end of Injury Prevention section.

4. To decrease the incidence of fall-related injuries in seniors.

Objectives	Indicator	Evidence-based Strategies
By ____, decrease the rate of hospitalizations due to falls for individuals over the age of 65 years by ____%.	• rate of accidental falls • rate of hip fractures • rate of death & hospitalization due to falls	• Remove environmental hazards in homes[XIV] • Promote safe footwear in winter[XIV] • Improve environmental factors, such as stairs, lighting, railings & walking surfaces.[XIV] • Exercise programsXV • Screening followed by interventions targeting intrinsic and extrinsic risk factors in individuals. (medication, poor lighting, stairs, etc.)[XVI]

Key Partners

Provincial Seniors Fall Prevention Committee, municipalities, Canadian Standards Association.

Rationale

Number of People Affected

Falls are an important health issue for older persons as they account for a substantial proportion of all injuries and are responsible for many deaths as well. Falls among seniors often result in moderate to severe injuries. The most frequent type of injury is orthopedic – mainly fractures and dislocations.[XVII]

Seniors represent a substantial percentage of the Saskatchewan population. In 1999, 14.5% of the total population was 65 years of age or older.[XVIII]

An epidemiological study of falls in Saskatchewan from 1992/93 to 1997/98 found the average rate of fall related episodes increased from 7.12/1000 for the 65-69 age group to 77.6/1,000 in the 95 and over age group. Female seniors were hospitalized for falls at twice the rate of males. More than three-quarters of falls among seniors occurred at home or in a residential institution. There was no significant difference observed among seasons.[XIX]

Seriousness/Impact on Population

Falls are the leading cause of injury hospitalizations among seniors in Saskatchewan.[XX] Falls account for 77% of all injury-related hospital admissions for seniors in Saskatchewan.[XX]

The estimated cost to Canadians in 1995 for fall-related injuries among seniors was $980 million.[XXI] This estimate includes both direct and indirect costs.

The outcomes of these fall-related injuries among seniors tend to be serious and often result in death, disability or loss of independence. The outcomes are not limited to physical trauma but include social withdrawal, psychological trauma and increased dependence.[xxii]

Modifiable Risk Factors

Both intrinsic and extrinsic factors have been associated with an increased risk of falls among seniors.[xxiii] Age is one intrinsic factor. Others include medication[xxiv], mobility impairment[xiv] and cognitive impairment[xxiii]. Extrinsic factors include various features of the physical environment such as poor lighting, stairs and a lack of handrails. Nearly 40% of hip fractures are attributable to the presence of three or more intrinsic and/or extrinsic risk factors.[xxv] Extrinsic factors have been implicated as greater risk factors for the 60-74 age group with intrinsic factors being more common causes for the 75 plus age group.[xxvi]

Consequence of not responding

- Increased or continued injuries

References

See end of Injury Prevention section.

5. To decrease community violence

Objective	Indicator	Evidence-based Strategies
• By ___the incidence of major abuse of violent events by specific age group for murder, assault, rape, child abuse, spousal abuse, abuse of older persons and dependants, and suicide in the district will be reduced by [xxvii] ___ percent.	• Existence of monitoring and reporting mechanisms. • Morbidity and mortality rates • Number of reported cases of crimes (violent, personal, property) • Crime data available • Incidence of rape and, attempted rape • Suicide death rates • Percent of injurious suicide attempts • Rate of specific disability • Number of Neighbourhood Watch Associations • Number or percent of police on foot or bicycle • Existence of uniform criteria adapted as local protocol • Existence of data and data system • Percent of hospital emergency departments and public health agencies with protocols	• Each community to document and make public, epidemiological information and data regarding circumstances of acts of violence and abuse • Measure of the connectedness of a community link between public safety and security • Consideration of social aspect of public safety • Uniform criteria for use by medical examiners and coroners in determining suicide as a cause of death • System for the routine collection of information on the magnitude, characteristics, and costs of mortality, morbidity and disability resulting from alcohol and/or drug-related violence • Extended protocols for routinely identifying, treating, and properly referring suicide attempts, victims of sexual assault, and victims of spouse, elder and child abuse to hospital emergency departments • Follow-up necessary to identify needs met or not met • Use of staff trained for follow-up • Involve participation of community in development • Implementation of unexplained child death review systems • Facilitate community partnerships and participation to identify the need for, and development of community based programs • Courses available and accessible • Existence of monitoring at schools • Appropriately stored weapons • Existence of programs available • Increase the knowledge of youth re: anger management training. • Community involvement with trained intra-familial crisis intervention and prevention of violence
• By ___ the district will understand the root causes of violence within their communities.	• Percentage of reported victims of violence that have been investigated and followed-up • Comparison of reporting system statistics with the expected statistics for the community • Number of persons reached by mutual support or self-help groups • Records of completed reviews • Perceptions of feeling safe or unsafe • Measures of connection between public safety and education • Presence of education classes for current and prospective foster and natural parents • Incidence of physical fighting among adolescents • Weapon-related death rate • Percent and prevalence of hand gun ownership • Rate of fatal and non-fatal firearm	

	injuries • Amount of time provided in health education (K to Grade 12) containing designated materials on self-esteem and choice, interpersonal communication, parenting, marriage and family	
• By 2002 the District will be served by crisis intervention, shelter, and support resources system to control situations recognized to contribute to, stimulate, or permit violent behaviour thereby decreasing community violence.	• Number of agencies trained in intervening in domestic violence with access to expert consultants • Number of caseworkers trained in crisis intervention and prevention of violence • Number of community resources, such as family-centered self-help groups, respite centres, and professional support programs • Presence of a system for crisis response teams • Number of agencies to assist in coping with stressful situations. • Number and percent of trained professionals • Number of people who can identify an accessible suicide prevention hotline • Percentage of professionals teaching non-violent conflict resolution skills • Percentage of the proportion of physicians, nurses, social workers, teacher and criminal justice professionals who have received training in the identification and referral of people who are victims of abuse	• Appropriate number of community agencies available to assist in coping with stressful situations • Increase the capacity of community to support youth participation in their acquisition of conflict resolution skills • Advocacy with schools, community agencies and community leaders to provide resources • Trained staff available in intrafamilial crisis intervention and prevention of violence with access to expert consultants • Accessible suicide prevention "Hotline" • Quality school health education available to teach non-violent conflict resolution skills • Seek arrangements with other agencies

Rationale

Number of People Affected

Spousal Violence

According to the 1999 General Social Survey on Victimization, 7% of people who were married or living in a common-law relationship experienced some type of violence by a partner during the previous 5 years. This rate was similar for women (8%) and men (7%). In Saskatchewan, the estimated rate of spousal violence for women was 11%, the second highest in the country; men living in Saskatchewan were also among the most frequently exposed to spousal violence. Pregnancy appears to constitute a time of heightened risk for violence, with studies reporting rates from 4% to 41%, depending on the population studied and the screening method used. The level of violence during the postpartum period has been found to be even higher than in the prenatal period. According to a 1997 snapshot of Canadian shelters for abused women, in Saskatchewan, the rate of women admitted to shelters for reasons of abuse was 25.2 per 100,000 women, compared with 18.2 per 100,000 for Canada as a whole.

Sexual Violence

Studies have reported that between 20% and 30% of adult women have experienced sexual abuse and assault during their lifetimes. As well, 33% to 50% of women who are physically assaulted by their partners are sexually assaulted by them. In a national study of college students 27.5% of the women surveyed said they had suffered rape or attempted rape at least once since age 14.3 years. Only 5% of those experiences were reported to the police.

Violence Against Older Adults

Although difficult to accurately determine, prevalence rates for elder abuse in Canada are estimated to be about 4%. According to the Incident-based Uniform Crime Reporting (UCR2) Survey, adults aged 65 and over represented 2% of all victims of violent offences in 1999. According to the 1999 General Social Survey on Victimization, older adults are more likely to experience emotional and financial abuse than physical or sexual violence. While 7% of older adults experienced some form of emotional or financial abuse, only 1% reported physical or sexual abuse. Older men (9%) were more likely than older women (6%) to report being victims of emotional or financial abuse.

Violence Against Children and Youth

According to the Incident-based Uniform Crime Reporting Survey, in 1999, children and youth under 18 years of age made up 60% of all sexual assault victims and 20% of all physical assault victims to a sample of 164 police departments. In the United States, adolescents make up 14% of the population aged 12 and over yet 30% of all violent crimes were committed against them. Further, methodologically strong research suggests that around one woman in three has experienced unwanted sexual experiences before the age of 16 years.

Dating Violence

The average prevalence rate for non-sexual dating violence is 22% among male and female high school students and 32% among college students. Over one-half of a representative sample of more than 1,000 female students had experienced some form of unwanted sex – 12% of these acts were perpetrated by casual dates and 43% by steady dating partners.

Seriousness/Impact on Population

Women who have experienced violence, whether in childhood or adult life, have increased rates of depression and anxiety, stress related syndromes, pain syndromes, phobias, chemical dependency, substance use, suicidality, somatic and medical symptoms, negative health behaviors and poor subjective health. More specifically, chronic pelvic pain and other pain syndromes, negative pregnancy outcomes, gastrointestinal problems such as irritable bowel syndrome and inflammatory bowel disease, headaches, chronic fatigue and sleep pattern disturbances, eating disorders, post-traumatic stress disorder, lowered self esteem, difficulties in sexual and interpersonal relationships, unsafe sex behaviors and both delayed seeking of preventive and prenatal health care and increased rates of emergency and primary health care utilization characterize abused women. Several studies have found that the abdomen is targeted more frequently and more severely in pregnant women. Violence during pregnancy is likely to inflict severe physical and psychological harm on the woman and the fetus. Pregnant women experiencing violence are more likely to have poor maternal weight gain, anaemia and infections, to give birth to a low birthweight baby and to smoke, drink alcohol, and use other drugs. Unwanted and unplanned pregnancies are increased amongst women living in violent situations. Women living in shelters are also suffer from insomnia, social dysfunction and depression and their families are considered disadvantaged by low incomes, frequent residence changes and dependence on social assistance.

Family violence is often lethal. In 1998, the rate of spousal homicide for wives was 7 per million couples. For husbands, the rate was 2 per million couples. Of the 12,767 victims of homicide between

1979 and 1998, 33% were killed by family members, 36% were killed by acquaintances and 12% were killed by strangers. Accordingly, almost 70% those killed were killed by someone known to them. Female victims were most likely to be killed by their husbands (66%), followed by their fathers and mothers (18%). In contrast, male victims of family homicide were most likely to have been killed by fathers or mothers (28%), followed by wives (26%). Older adult homicides follow a similar pattern. Between 1979 and 1988, 49% of male victims of homicide were killed by acquaintances, 25% by strangers, 20% by family members and 7% by spouses. Older female victims of homicide were equally likely to be killed by spouses (28%) as by acquaintances (28%) and other family members (27%). In terms of homicides against children and youth, in 1998, 15% of all homicides in Canada were committed against children and youth under the age of 18. As with child and youth assaults reported to the police, the majority of child and youth victims of homicide were killed by parents-predominantly fathers.

Abused children are also at risk for significant physical and psychic distress. A large body of research now attests to the association of child sexual assault and a variety of physical, sexual and psychological problems in adulthood. Child sexual abuse significantly increased the risk of major depression, generalized anxiety disorder, panic disorder, alcohol dependence and drug dependence, with the odds ratios increasing with the degree of abuse. For example, psychiatric disorder were 2.6 to 3.3 times more common among women whose child sexual abuse included intercourse, and the risk of substance abuse was increased more than fourfold. It has also been suggested that child sexual assault may be implicated in postnatal depression.

Among young women, severe dating violence was associated with recent poor health-related quality of life and suicide ideation or attempts. Among young men, severe dating violence perpetration was strongly associated with poor health-related quality of life and suicide attempts and lower scores for all domains of life satisfaction.

It is exceedingly difficult to assess the total cost of violence to our society in dollar terms. One study completed in the province of British Columbia estimates the costs of violence against women (for the province of BC alone) to be $385 million per year. If the missing costs of health care, child services, housing, legal and court costs and intergenerational effects were added to the above total, the costs of violence against women in BC alone would approach 1 billion dollars per year.

Modifiable Risk Factors

Abusive families tend to demonstrate low family cohesion, low expressiveness, low independence, and low achievement but a high degree of family conflict. These families are also characterized by low orientation toward intellectual, cultural, and recreational activities among abusive families. The more children are exposed to a particular parenting style and quality of experience, the more they internalize that style and manifest it in their subsequent parenting attitudes and practices. As well, etiological research studies suggest parenting and family interventions that decrease family conflict and improve family involvement and parental monitoring should reduce problem behavior regarding youth violence. The goal of these programs should be to decrease risk factors but, also, to increase ongoing family protective mechanisms such parental supervision, attachment to parents, and consistency of discipline.

In addition to family factors, the conclusion of the public health community, based on over 30 years of research, is that viewing entertainment violence can lead to increases in aggressive behavior, particularly In children. Prolonged viewing of media violence can lead to emotional desensitization toward violence in real life.

Women are most at risk of assault from those known to them such as partner or ex partners. Accordingly, four factors have been identified as strong predictors of partner violence: economic inequality between men and women, a pattern of using physical violence to resolve conflict, divorce restrictions for women and the presence of male authority and decision-making in the home. Other research suggests that geographic isolation, lack of anonymity and the strong socio-cultural emphasis on marriage and motherhood commonly observed in rural communities has an impact on the way abuse is manifest in rural

communities. This is compounded by the lack of services – mental health, police, emergency shelters in rural communities. As well, a number of studies have found that the risk of partner violence is increased when the partner is unemployed and family income is at or below the poverty line.

The likelihood of becoming a victim of dating violence is associated with having female peers who have been sexually victimized, lower church attendance, greater number of past dating partners, acceptance of dating violence, and personally having experienced a previous assault. Further, as the consumption of alcohol by either the victim or perpetrator increases, the rate of serious injuries associated with dating violence also increases.

For the elderly, the victims of psychological and physical abuse are often in good health but suffer from psychological problems, while their abusers often have a history of psychiatric illness and/or substance abuse, often live with the victims and are financially dependent. Patients with dementia who exhibit disruptive behavior and who live with family caregivers are more likely to suffer physical abuse, while their abusive caregivers may have low self-esteem and may be clinically depressed. A typical financial abuse victim may not exist. As well, victims of neglect tend to be very old, with cognitive and physical incapacities, which serves as a source of stress for their caregiver. There is some evidence to suggest that the intergenerational transmission of violence (children learning, through observation and participation that violence is an acceptable response to stress) contributes to the development of elder abuse.

Evidence-based Strategies

The interlocking causes of violence are embedded in every level of society- the individual, the family, the community and socio-cultural setting. For this reason, isolated approaches to the reduction of violence cannot be effective. One piece of evidence to support family-based strategies is that the co-occurrence rate of child abuse and intimate partner violence is approximately 50% (as described by researchers).

To leave violent partners, women need to have confidence that adequate legal and protective safeguards will prevent pursuit, harassment and further violence. Specific needs include access to sanctuary, safe affordable housing, adequate income, gender sensitive policing and strong community and legal sanctions against all forms of gender-based violence. As well, research on violence points to the protective and mediating factors associated with positive mental health outcomes and has identified which psychological outcomes may be modified. One seven-year study found that women who originally had a negative evaluation of self were most likely to change to a positive evaluation if two life changes occurred – positive changes in the quality of close relationships and improvement in work status. This is confirmed by one study of violence during the childbearing year which indicated that having a confidant and social support from friends were significantly protective against violence. As well, a study on sexual assault, social relations and physical health found that better health was reported by women who received emotional support and validation. On the other hand, worse health was related to negative social reactions to the victims, thus underlining the critical role of social attitudes in mediating poor health outcomes. Basically, then, studies indicate that psychological problems in the long term are by no means inevitable and that support and intervention is possible in a variety of settings. Strategies need to be developed intersectorally to reduce social isolation, enhance women's social support networks and increase access, in all spheres of life, to opportunities for experiencing competence, autonomy and success.

Physicians are often the first lines of defense in cases of domestic violence. In fact, one study suggests that, because 38.7% of women who received medical care for intimate partner violence had not received police or restraining order assistance, medical practitioners may be a critical source of support and intervention to many women. However, most interventions that incorporate strategies in addition to education (providing specific screening questions) are associated with significant increases in identification rates.

In terms of dating violence, the Centers for Disease Control (CDC) funded a community-based primary prevention project from 1993 to 1997, addressing dating violence in a rural North Carolina county. In

this project, 8th and 9th grade students received classroom instruction about gender stereotypes, conflict management skills, and social norms that contribute to dating violence. Classroom instruction was supplemented with student-conducted dramatic performances. Parents, police workers, and other key individuals in the community were also trained to be better resources for youth seeking assistance about teenage dating violence. At follow-up, less psychological abuse, sexual violence, and violence perpetrated against the current dating partner were reported in the treatment schools. Most program effects were explained by changes in dating violence norms, gender stereotyping and students' awareness of available services.

In terms of child abuse and neglect, of all primary prevention strategies tested, parenting education for adults and adolescents before they become parents is often identified as the strategy most likely to prevent initial injuries to children. In fact, in a national search for effective family strengthening programs, researchers found that parent education or parent support approaches were considerably less effective than highly structured approaches such as behavioural parent training, family skills training, family therapy, or comprehensive family support programs. Potentially counterproductive approaches include interventions based on information-only models and a few of the alternative activities that involve youth with adults or with peers that have antisocial norms. Child-only interventions, so popular in prevention, have the potential to produce iatrogenic effects (changes induced as a result of therapy) on family protective factors; therefore, more experts in the field are calling for family-focused prevention interventions. (many specific examples of effective family intervention programs can be found in Kumpfer and Alvarado, 1998).

Another promising intervention are full-service schools. These may include academic and computer classes, sports activities, job training, drama, art and music classes, leadership and support groups, social services, health care services and clinics, parenting classes and counselling. Importantly, these programs are not limited to youth and, in fact, are designed to include parents and other members of the community.

Education and public awareness are believed to be critical elements in any comprehensive approach to abuse and neglects of older adults. This includes the older adults, professionals, caregivers, and the public. Again, what is needed is a broad-based community response to the problem including services that are available, accessible, affordable, known and perceived as appropriate by those for whom they are intended. Although they have not been strenuously examined, respite care and adult day care are two programs that show promising results.

Consequences of Not Responding

As described above, violence against women has a tremendous effect on their physical, psychological/mental and sexual behavior.. In addition to long-term effects on the abused, the intergenerational effects of violence can result in indefinite perpetuation of violence – from children to the elderly. As well, the emotional and physical security of women (and men, for that matter) has a direct, discernible impact on their relationship with the community and, subsequently, the health of the community. Violence can further weaken women's social position by operating on structural determinants of health such as employment and by implication, income at the same time as increasing their psychological vulnerability to depression and other disorders.

There is a clear link between witnessing and experiencing family conflict and violence and later violent delinquent acts, poor school performance, poor mental health and increased teen pregnancy. Abused children exhibit high degrees of antisocial and delinquent behavior in adolescence and criminal behavior in adulthood. Child abuse has clearly been shown to be one of the leading causes in the development of juvenile delinquency and criminal behavior in adults. Also, personal victimization, hopelessness, and depression are also associated with later violent behavior in youth. Research also suggests that children witnessing abuse may exhibit the same symptoms as children who directly experience physical and/or sexual abuse.

The effects of violence are costly – personally, socially and financially. However, limiting treatment to the treatment of symptoms is simply ineffective – the outcome of such an approach ill serves the individual, the health care system and the community. It initiates a cycle of patient contact with medical and mental health service providers, with the attendant risks of increasingly severe and debilitating sequelae for the individual, as well as exhaustion of resources within the system providing care.

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Communicable Disease Control

GOAL AREA: COMMUNICABLE DISEASE CONTROL

BROAD GOAL: To prevent, control and manage communicable diseases of public health importance.

In order to address the goal area successfully, health districts must work on the following issue goals.

ISSUE GOALS:

1. To reduce the incidence of communicable and vaccine preventable diseases in institutions.
2. To reduce communicable disease preventable by current public vaccine programs.
3. To control the incidence of anti-microbial resistant organisms.
4. To reduce the occurrence and consequences of sexually transmitted infections and blood-borne pathogens.
5. To prevent, manage and control specific communicable diseases in certain high-risk circumstances.
6. To prevent, manage and control cases of travel related diseases.
7. To reduce the incidence of tuberculosis.
8. To prevent, manage and control cases of zoonotics and vector borne diseases.
9. To reduce the incidence of other communicable and reportable diseases.

Health districts may choose from the following sample objectives, indicators and evidence-based strategies for each issue goal or develop their own to accommodate local needs and resources. Rationale for each issue goal is also included.

Rationale

There are over 60 reportable diseases of public health importance in Saskatchewan and over 6,000 individual cases reported per year. The importance of the disease is related to a number of factors including incidence rate, communicability, severity (morbidity and mortality), preventability, controllability, and direct costs. Public health approaches offer measures, which may be quite varied, to address each disease on a number of fronts. These measures can involve surveillance, immunization for prevention or management, early diagnosis and treatment, contact tracing, prophylactic medications, education, personal health practices, proper sanitation, etc. These measures have been clearly demonstrated to reduce the rates of many diseases over the past 40 years. For some diseases individual case management is necessary; for others, a broad population approach is the answer. For many there are a number of approaches that must be used to achieve maximum disease control. Communicable disease response and reporting are legislated by the Public Health Act, 1995 and its regulations. Therefore, public health must respond to these issues.

1. To reduce the incidence of communicable and vaccine preventable diseases in institutions.

Objective	Indicator	Evidence-based Strategies
• To reduce morbidity and mortality associated with communicable diseases in institutional settings. • ___% of clients in long-term care institutions receiving influenza vaccine annually. • ___% of clients in long-term care institutions immunized against pneumococcal disease.	• Numbers of cases annually • Annual incidence rates	• Develop and maintain a comprehensive communicable disease surveillance system • Investigate and document all reported cases and contacts of cases with communicable diseases • Ensure proper communication between all partners • Educate public and health care workers on prevention, early identification, management and outbreak control of communicable diseases • Maintain and establish an Infection Control Committee • Ensure comprehensive infection control practices are in place • Ensure adequate resident and staff immunization • Support other community institutions i.e. correctional facilities, day care centres, group homes, personal care homes to develop appropriate infection control policies and procedures • Ensure that a contingency plan is in place should an outbreak occur • Ensure co-ordination of response within the institution

Key Partners

Health Canada, Centre for Infectious Disease Prevention and Control, Saskatchewan Health - Population Health Branch, provincial laboratories, health districts, municipal governments, health care providers i.e. physicians, local laboratories, institutions (correctional, long term care facilities, etc.)

Rationale

Public Health services are frequently consulted with regard to infection control in the following institutions:

- Hospitals

- Acute
- Rehabilitation
- Psychiatric
- Long term care facilities
- Personal care homes

The rates of some infectious diseases are on the increase, and with more organisms becoming resistant, prevention becomes more important.

A number of outbreaks in facilities (Enteric disease, Hepatitis A, Influenza, etc.) has renewed concerns in this regard. Strict infection control practices in institutions are important to prevent, but also control infections in these institutions. Infectious outbreaks in institutions contribute to disease in the community and vice versa. Public Health can assist within acute care institutions by participating in infection control committees and can lead in infection control in community institution settings, such as long-term care.

Modifiable Risk Factors

There are a number of factors upon which intervention can be focused. These include: all VPDs (immunization); rodent and insects (vector control); waterborne disease (water quality control); food borne diseases (food quality control); lifestyles risk like injection drug use (harm reduction approach); and disease transmission (hand washing, etc.)

2. To reduce communicable diseases preventable by current public vaccine programs.

Objective	Indicator	Evidence-based Strategies
• By _____, reduce indigenous (locally acquired) measles to _____. • By _____, reduce indigenous rubella infection during pregnancy and thus prevent fetal damage to _____. congenital rubella syndrome, and other negative outcomes of infection. • Maintain diphtheria, tetanus and wild indigenous polio at _____. • By _____, reduce preventable cases of invasive haemophilus influenzae type b infections in children to _____. • By _____, to achieve the following vaccine coverage targets. • _____% coverage for the first dose measles, mumps & rubella by the second birthday. • _____% coverage for 2nd dose measles, mumps & rubella by school entry. • _____% coverage of childbearing women with low titres for rubella. • _____% coverage for up-to-date diphtheria, pertussis, tetanus, haemophilus influenzae type b & polio by the second birthday. • _____% coverage for up-to-date diphtheria, pertussis, tetanus, haemophilus influenza type b & polio by school entry. • _____% coverage for up-to-date diphtheria & tetanus by completion of Grade 8. • _____% coverage of residents in health care institutions and long term care for influenza vaccine. • _____% coverage of staff in	• Numbers of cases annually • Annual incidence rates • Vaccine coverage rates	• Enhance current programs focused on the pre-school and school age population as well as high risk adults and those >65 years • Improve access to immunization • Add immunization programs as necessary based upon public health analysis of factors such as epidemiology, availability, efficacy and stability of vaccine and cost effectiveness and cost benefit in the light of health care priorities • Promote immunization programs for health care workers and staff in other workplaces. (i.e. Influenza, Hepatitis B) • Monitor adverse events associated with routine vaccine programs • Ensure that outbreak control strategies are developed and in place, including a strategy for pandemic influenza • Educate the public and health care professionals regarding immunization programs • Develop a provincial monitoring and surveillance system to track immunization coverage rates and disease rates

institutions and long term care for influenza vaccine. • _____% coverage for hepatitis B by completion of Grade 6. • _____% coverage of persons age 65 and over with influenza vaccine. • _____% coverage of persons age 65 and over with pneumococcal vaccine.		

Key Partners

Saskatchewan Health – Population Health Branch, school divisions, senior groups, daycares, health care providers, health care institutions, employers, and media.

Rationale

Currently the incidence of the vaccine preventable diseases is low due to immunization; however, these diseases are still circulating and it is important to maintain immunization programs. With the exception of a localized outbreak in 1997, the average number of reported measles cases is 3 in the past 10 years. Since a province-wide outbreak of rubella in 1991-2, the average number of cases reported is four. There were no cases reported in 1998 and 1999. Pertussis averaged 70-120 cases in the early part of the decade, however since 1993 the incidence doubled, then tripled until the reported cases reached over 1000 in 1999. Haemophilus influenza B has dropped steadily from 26 cases in 1991 to only one case reported in 1999. Hepatitis B cases ranged from 21-57 a year during the 1990's. Individuals or groups who choose not to immunize as well as those travelling to other countries are at higher risk for getting a vaccine preventable disease. Individuals immigrating to Canada may be at higher risk due to poor immunization coverage in other countries.

Immunization results in huge cost savings to the health care system. The total cost of immunizing a child from infancy to adolescence is approximately $150 or the amount it costs to keep a hospital bed open 5 hours. In Canada immunization against haemophilus influenzae type b costs $12 million/year, but saves $30 million/year in treatment costs. The American Center for Disease Control and Prevention estimates savings of $6.14 for every dollar spent on polio vaccine and savings of $13.50 for every dollar spent on measles vaccine.

3. To control the incidence of antimicrobial resistant organisms.

Objective	Indicator	Evidence-based Strategies
• To limit the emergence and transmission of antimicrobial resistant organisms of public health importance.	• Numbers of cases annually • Annual incidence rates	• Surveillance system for early detection and prompt intervention • Strict infection control measures in acute and long-term care institutions • Stringent protocols regarding the use of antibiotics in humans and animals • Research into link of antibiotic use in animal husbandry and developing antimicrobial resistant organisms • Education of the public, re: appropriate use of antibiotics • Education of professionals, re: use of antibiotics (MD's, pharmacists)

Key Partners

Provincial laboratories, Saskatchewan Health – Population Health Branch and Drug Plan & Extended Benefits Branch, local laboratories, physicians & their professional associations, nurses and their professional associations, infection control practitioners, Centre for Infectious Disease Prevention and Control (Health Canada), Canadian Infectious Disease Society, Canadian Food Inspection Agency, provincial and national agriculture departments, veterinarians and their professional associations, pharmacists and their professional associations, human and animal health professionals, pharmaceutical companies, acute and long term care facilities, and health districts.

Rationale

Antimicrobial resistance involves the emergence of drug-resistant bacteria, parasites, viruses and fungi. The increased prevalence along with the rapid emergence of new antimicrobial resistant organisms has escalated to become a new burden for public health infectious disease control programs. Treatment can be difficult. Overcrowding contributes to the spread of these organisms. Strict infection control in institutions is important in controlling disease spread. Susceptibility is general. Increases in population density, international travel, and commerce interact to reinforce the need for co-operation from all countries to control the emergence and spread of antimicrobial resistant organisms.

4. To reduce the occurrence and consequences of sexually transmitted infections and blood-borne pathogens.

(Including but not limited to the following diseases: Gonorrhea, Hepatitis B, Chlamydia, Hepatitis C, Syphilis, and HIV/AIDS)

Objective	Indicator	Evidence-based Strategies
• By _____ to reduce the incidence of gonorrhea and chlamydia by _____%. • By _____ to reduce the incidence rate of syphilis by _____%. • By _____ to prevent all cases of endemic congenital syphilis by _____%. • By _____ to reduce the incidence of acute hepatitis B cases in Saskatchewan by _____%. • To reduce incidence of new HIV cases by _____%. • To reduce the incidence of perinatal HIV cases by _____%. • To reduce the incidence of new cases of hepatitis C by _____%. • Numbers of local programs available to address underlying issues that predispose to contracting these diseases.	• Numbers of cases annually • Annual incidence rates	• Support the development of Harm Reduction Initiatives • Maintain routine prenatal screening for syphilis and hepatitis B • Promote routine prenatal screening and counselling for HIV/AIDS • Promote screening for syphilis among persons being tested for other sexually transmitted diseases • Promote testing among persons with high-risk behaviours, and those in correctional facilities and healing lodges • Increase access to alcohol and drug rehabilitation programs, promote referrals to these programs and promote access to methadone programs • Promote health education and community awareness and support including information in the school curriculum • Education of physicians and nurses about testing, counselling and follow-up • Ensure partner notification and counselling • Enhance programs directed to sexually active groups e.g. 15-29 year olds • Educate high risk groups re testing and treatment options • Continue with immunization for hepatitis B • Promote hepatitis B immunization for health care workers and other high risk occupations e.g. emergency service workers • Promote support groups for people with chronic infections such hepatitis B or C, or HIV/AIDS • Maintain and increase

		infectious disease specialist services in the province • Support the implementation of comprehensive strategies to reduce injection drug use and disease spread • Ensure adequate access to appropriate clinical services are available

Key Partners

Persons living with and/or affected by the disease; justice, police, education, labour and social services departments and agencies; mental health services, addiction services, home care, and public health services; STD/STI clinics and primary health centres; acute and long term care, respite and palliative care services; physicians including infectious disease specialists; first responders, dentists, funeral directors, pharmacists, Saskatchewan Health – Population Health Branch, Provincial Laboratory, First Nations health services, youth organizations, community-based organizations and service groups, crisis shelters; pastoral care, Canadian Blood Services, local, provincial and federal governments and various departments such as those in charge of waste disposal sites

Rationale

There are multiple factors or determinants of health, which can lead to an increased risk of an individual becoming infected with a sexually transmitted infection, HIV/AIDS, hepatitis B or C or any other blood borne pathogens. Poverty, income and the type of employment, level of education, mental health, addictions, sexual and physical abuse and age less than 25 years have all been associated with an increased risk of acquiring these diseases.

Behaviours known to be associated with increased risk of sexually transmitted infection include:

- Sexual contact with person(s) with a known sexually transmitted infection;
- Youth under 26 years of age with multiple partners;
- Street involvement (e.g. homelessness);
- Intercourse with a new partner in the last 12 months;
- More than two sexual partners in the previous 12 months;
- No contraception or non-barrier methods used;
- Injection drug use/alcohol use;
- Immigration from or having sexual contact with residents of countries where particular sexually transmitted infections are epidemic;
- Men having unprotected sex with men. Depending on which disease – chlamydia, HIV/AIDS or Gonorrhoea;
- Commercial sex workers including "survival sex" (exchanging sex for money, drugs, shelter or food).

Untreated disease can further the spread of undetected disease to sexual partners and infants in utero and at birth. Pelvic inflammatory disease may occur in females with the risk of hospitalization, tubal pregnancy and infertility. There is an increased risk for the transmission of HIV when other sexually transmitted diseases are present. The personal and societal consequences as well as the health care costs are tremendous.

Complications of these infections include:

- Pelvic inflammatory disease;
- tubal pregnancy, infertility;
- increased risk of HIV and other acute sexually transmitted diseases;
- chronic infections; and
- some cancers.

The rates of chlamydic trachomatis have remained stable since a 30% decline between 1991 and 1992. However, the 1998 rate of 235 per 100,000 is approaching two-fold the national rate of 130 per 100,000 and is the third highest among the provinces and territories. Gonorrhoea rates continue to decline a trend that began in 1993 when the rate dropped by a third to 48 per 100,000. The 1998 rate of 33 per 100,000 doubled the national rate. Hepatitis B rates fluctuated between 2.1 to 5.5 per 100,000 in the past decade with no clear trend emerging. Trends in HIV were similar to Hepatitis B (fluctuating between 1.6 to 4.1 per 100,000, which may reflect a common risk exposure – injection drug use or infected partners who are injection drug users. Hepatitis C infections are reported in the year they are identified by laboratory testing, therefore, close to 4,500 cases that have been diagnosed since testing began in 1991 may have been infected for many years prior to a positive test. An average of 500 cases are reported annually.

5. To prevent, manage and control cases of travel-related diseases.

(Including but not limited to the following diseases: Cholera, Hepatitis A, B, Japanese Encephalitis, Meningococcal, Traveller's Diarrhea, West Nile Fever, Dengue Fever, Lyme Disease, Malaria, Rabies, Typhoid, Yellow Fever)

Objective	Indicator	Evidence-based Strategies
• To reduce the annual rate of malaria cases associated with international travel to _____. • To reduce the annual rate of typhoid cases associated with international travel to _____. • To maintain the annual number of yellow fever cases associated with international travel at _____. • To maintain the annual number of cholera cases associated with international travel at _____. • To increase the percentage of travellers visiting a travel health clinic before departure.	• Numbers of cases annually • Annual incidence rates	• Encourage travellers to visit a travel clinic before embarking on international travel • Educate the public, physicians and travel agents re drug and non-drug measures to prevent diseases (infectious and non-infectious) during international travel • Ensure that the provincial communicable diseases computerized system has the capability to assess risk associated with international travel, (i.e. Traveller's Diarrhea – Amoeba, Campylobacter, Giardia, Hepatitis A, Salmonella, Shigella; Hepatitis B) • Investigate and document all reported cases and contacts (where applicable) of cases associated with international travel • Ensure access for travellers to appropriate travel health information and immunizations

Key Partners

Health Canada's Centre for Infectious Disease Prevention and Control, Saskatchewan Health - Population Health Branch, Provincial Laboratory, health care providers i.e. physicians, travel agents, local laboratories, health districts, municipal governments

Rationale

With the number of international travellers increasing annually, and more people going to developing countries for long periods of time, the risk of contracting a disease is ever present. Although we do not have large numbers of these diseases currently, prevention strategies, management and control should be optimal. The following chart outlines a few statistics for travel related disease.

	Canada Rate per 100,000					Saskatchewan Rate per 100,000				
Year	94	95	96	97	98	94	95	96	97	98
Malaria	1.5	2.2	3.3	3.4	1.2	0.3	0.0	0.3	0.6	0.3
Typhoid	0.3	0.3	0.1	0.2	0.3	0.0	0.0	0.1	0.0	0.1

Disease	Canada 10 Year Prevalence	Saskatchewan 10 Year Prevalence
Cholera	3	0
Yellow Fever	No cases reported in Canada since 1924	

The foregoing table shows a rate of less than 1 per 100,000 cases of travel-related disease in the past half a decade.

6. To prevent, manage and control specific communicable diseases in certain high-risk circumstances.

Objective	Indicator	Evidence-based Strategies
• To decrease Meningococcal disease spread in outbreak situations • By _____, to reduce the rates of Hepatitis A in high-risk communities to _____%.	• Numbers of cases • Annual incidence rates	• Surveillance of disease for early detection • Develop policies for the mobilization of resources in response to an outbreak of specific communicable diseases • Ensure that focused population has access to immunization • Education of the public regarding proper sanitation and personal hygiene including the importance of hand washing • Targeted education to people at risk of spreading disease. I.e. food handlers, health care workers, daycare workers • Water and sewage monitoring and treatment

Key Partners

Saskatchewan Health – Population Health Branch, school divisions, daycares, health care providers, health care institutions, media, aboriginal organizations.

Rationale

Meningococcal disease is most commonly seen in children, young adults and those living in crowded living conditions and has a case fatality rate of 5-15%. Meningococcal vaccine is not a part of the routine immunization program because the duration of protection is limited. The vaccine has been found to be very effective to manage outbreaks of meningococcal disease in large institutional or community settings. In 1996 cases of Hepatitis A disease reported at a high of 450 and because of intervention with Hepatitis A vaccine, the number of cases has dropped to 15 in 1999. Outbreaks of Hepatitis A are most commonly due to contamination of food and water by an infected person. Crowded living conditions and poor sanitation increase risk. Hepatitis A vaccine is used for those >2 years in high-risk groups and children living in communities that have consistently elevated rates of Hepatitis A.

The province experiences an average of seven cases of invasive meningococcal disease per year. The only outbreak in the last decade occurred in 1993 when 31 cases in a localized area were reported. Hepatitis A rates fell dramatically from a high of 43.8 cases per 100,000 during a wide spread outbreak to 1.4 in 1999 as a result of a targeted hepatitis A province-wide immunization campaign.

7. To reduce the incidence of tuberculosis.

Objective	Indicator	Evidence-based Strategies
• To effectively manage and treat existing cases of TB. • To reduce the progression of latent TB to active TB infection by _____%. • To reduce drug resistance to TB by _____%. • By _____ to achieve the following completion rates. • _____% of active TB cases will complete treatment. • _____% of contacts to a TB case will be assessed. • _____% of individuals on chemoprophylaxis will complete their course of medication. • To reduce by _____% the number of new cases of TB.	• Numbers of active cases • annual incidence rate • % of active cases completed treatment • % of contacts seen within 30 days • % of persons on prophylaxis completing course of medication	• Maintain a surveillance system for early detection and prompt intervention • Investigate all TB and suspected TB cases according to the latest Canadian TB Standards and Provincial TB Control Manual • Trace, investigate and follow-up contacts to all cases to TB • Provide TB screening in high-risk groups • Make available and distribute free anti-tuberculosis drugs for treatment and prevention • Monitor patients, compliance with prescribed drug therapy and monitor drug resistance in TB infected individuals • Ensure that all persons with active TB complete the prescribed course of chemotherapy through the provision of directly observed therapy (DOT) • Ensure that persons for whom chemoprophylaxis is recommended receive directly observed prophylaxis (DOP) where necessary • Promote TB awareness among all health professionals and provide annual reports on the status of TB • Ensure that institutions admitting persons who have active TB have policies to limit transmission of the disease • Educate and work with the general community and high risk groups regarding risk factors for tuberculosis infection and the benefits of chemoprophylaxis • Work with community partners to promote activities to reduce risk factors and disease transmission that would include reducing poverty, providing adequate housing and preventing overcrowding

		• Maintain a district health staff knowledgeable in epidemiological principles and practices, who can work with district, provincial and federal levels

Key Partners

Saskatchewan TB Control Program, Saskatchewan Health – Population Health Branch, Provincial Laboratory, Health Canada – First Nations and Inuit Health Branch, Immigration Canada, health districts, First Nations health services, hospitals, long term care facilities, correctional facilities, Social Services, cultural societies/organizations, anti-poverty agencies and coalitions, Canadian Lung Association, Canadian AIDS Society.

Rationale

TB continues to survive. Global trends show that the declining incidence of this disease is now reversing. One third of the world's population is infected with TB and drug resistant cases of TB are increasing.

High-risk groups for TB include the following:
- Disadvantaged groups with depressed socio-economic conditions
- Young children living on reservations
- HIV infected (especially in the disadvantaged)
- Residents and workers in long term care and correctional facilities
- Foreign-born residents from countries with a high incidence of TB
- Adolescents born outside of Canada

In order to combat this disease, it is critical to have a well-defined, alert public health component in the TB control program.

Saskatchewan Statistics:

- There were 91 new and 7 relapsed cases of TB in 1998; 39 cases (40%) occurred in the 3 most northern health districts.
- The incidence rate was 8.8 new cases per 100,000 population in 1998
- Saskatchewan has the highest rate of TB among the Canadian provinces.

8. To prevent, reduce, manage & control cases of zoonotics and vector borne diseases.

(Including but not limited to the following diseases: Anthrax, Creutzfeldt-Jakob Disease, Hantavirus, Lyme Disease, Plague, Psittacosis, Q Fever, Rabies, Rocky Mountain Spotted Fever, Western Equine Encephalitis, West Nile Virus)

Objective	Indicator	Evidence-based Strategies
• To maintain rates of human cases of rabies at _____. • To ensure that all reported animal bites have been assessed and managed appropriately.	• Numbers of cases • Annual incidence rates	• Education of the general public regarding risk factors and methods of prevention • Targeted education to people at increased risk of acquiring the diseases (occupational or life style risks) • Surveillance of the disease for early detection and prompt intervention • Mosquito and rodent control • Regulations on the sale of birds that may carry infection • Pasteurization of milk • Proper disinfection and disposal of animal products • Immunization of pets and other animals as indicated • Immunization of individuals at high risk of acquiring disease • Investigate and document all reported cases and contacts with communicable diseases • Stringent outbreak control policies

Key Partners

Provincial Laboratory, Saskatchewan Health – Population Health Branch, local laboratories, physicians, Canadian Food Inspection Agency, Canadian Co-operative Wildlife Health Centre, Prairie Diagnostic Services, Agriculture Canada, Saskatchewan Agriculture and Food, Department of Labour (for occupational risks), Saskatchewan Environment Resource Management, Society for the Prevention of Cruelty to Animals, Centre for Infectious Disease Prevention and Control (Health Canada), veterinarians, and municipal governments.

Rationale

These diseases exist throughout the world. Although we don't have large numbers of these diseases, we must continue with strict prevention and control measures to prevent large-scale outbreaks. Susceptibility to these diseases is general. New diseases continue to emerge and put our population at risk. Prevention and early detection through active surveillance are the most cost-effective ways of dealing with these diseases. Investigation and control of these diseases is mandated through legislation by the Public Health Act.

There have been no cases of Lyme disease and one case of rickettsial infection reported in the past decade. Hantavirus cases total 6 in the last 10 years and occurred sporadically. No human rabies and five sporadic cases of tularaemia were reported in the same time period. An average of 9 cases of yerisinia were reported since 1990. One case of toxoplasmosis has been identified since reporting began in 1994. Five cases of psittacosis, reported in 1995, are the only ones reported this decade. No cases of plague, anthrax, Western equine encephalitis or West Nile virus were identified.

9. To reduce the incidence of other communicable and reportable diseases.

(Includes but not limited to the following diseases: Aeromonas, Amoeba, Clostridium botulism, Campylobacter, Cryptosporidium, E.coli). (Diseases caused by the following organisms: Giardia, Hepatitis A, Invasive Group A Streptococcus, Salmonella, Shigella, Typhoid and Paratyphoid, Varicella, Yerisinia).

Objective	Indicator	Evidence-based Strategies*
• To prevent, manage, and control the annual rate of cases of these diseases. • To ensure that appropriate protocols or contingency plans are in place to efficiently and effectively manage outbreaks. • To ensure timely investigation and interventions to lessen the impact of outbreaks.	• Number of cases annually • Annual incidence rates	• Surveillance of diseases for early detection and prompt • Intervention • Stringent outbreak control policies • Investigate and document all reported cases and contacts of cases with communicable diseases • Immunization (when applicable) • Education of the general public regarding risk factors and methods of prevention • Targeted education to people at increased risk of spreading diseases e.g. food handlers, health care workers, day-care workers, swimming pool operators, water purveyors • Exclusion of infected workers from the workplace • Inspections of public eating establishments • Food Safe training • Proper handling and storage of food • Proper disinfection of food handling equipment • Plumbing and sewage inspections • Water and sewage monitoring and treatment • Predefine the respective roles and appropriate lead agencies for routine situations

*** All strategies do not apply to each of the diseases listed**

Key Partners

Centre for Infectious Disease Prevention and Control (Health Canada), Saskatchewan Health – Population Health Branch, provincial laboratories, local laboratories, physicians, Canadian Food Inspection Agency, municipal governments, Saskatchewan Agriculture and Food, Agriculture Canada, Saskatchewan Environment and Resource Management, Saskatchewan Water Corporation and the Prairie Farm Rehabilitation Administration.

Rationale

Infectious diseases remain an important cause of morbidity and mortality. Infectious diseases represent constant new challenges to public health's role as new organisms emerge and cause disease. Increased rates of international travel are bringing new diseases to our country. Surveillance, case-finding, contact tracing, immunization, infection control, and risk assessment all work together to assure effective control of infectious diseases by public health. Public health professionals must remain vigilant to ensure that systems are in place that are capable of controlling all infectious diseases.

Campylobacter infection rates varied little over the past 10 years, fluctuating between 20.4 and 30.2 per 100,000. Cryptosporidiosis rates were more erratic, fluctuating between 2.4 to 15.1 per 100,000 since reporting began in 1994. The higher rates are associated with localized clusters of cases. Giardiasis rates dropped in the last 3 years of the last decade from an average of 385 cases between 1994-1996 to 221 cases from 1997-1999 for a rate of 17.8 per 100,000 in 1999. Amoebiasis rates stabilized around 5.2 per 100,000 until 1999 when the rate was 1.9 per 100,000. Salmonella rates remained stable at 200 per 100,000 in the latter part of the 1990's following a rate twice that high in the earlier part of the decade. Shigella rates began to drop in 1995 and fluctuated close to 10 per 100,000 throughout the latter part of the 1990's. Approximately 35 cases (3.5 per 100,000), of verotoxogenic E.coli were reported each year in the latter part of the 1990's, down from 54 in the first 4 years of the 1990's.

References for CDC Section

Supporting documentation:

For many of these diseases there are a number of manuals, reports, texts or pieces of legislation that can assist the practitioner in responding appropriately. Obviously, not all apply to each disease.

- Legislation/regulations/standards/guidelines/policies
- International Health Regulations
- NACI Guidelines
- Saskatchewan
  - Saskatchewan Public Health Act
  - Saskatchewan Communicable Disease Regulations
  - Saskatchewan Communicable Disease Control Manual
  - Saskatchewan Immunization Manual
  - Saskatchewan Guidelines for Blood-Borne Pathogens
  - HIV Transmission Guidelines for Assessing Risk
  - Canadian Immunization Guide (Health Canada)
  - National immunization consensus documents
  - Canada Food Inspection Agency
  - CITB – morbidity, mortality, physician billing (Medical Services Branch), population data
  - Canadian Medical Association HIV Testing Guidelines
  - Canadian Medical Association Guidelines for Blood-borne Pathogens
  - Canadian and Saskatchewan Obstetrics and Gynecology Guidelines
  - National and provincial sexually transmitted disease guidelines
  - Saskatchewan Occupational Health & Safety Act
  - Hospital Standards Act
  - Hospital Act
  - Health District Act
  - Provincial Post Exposure Prophylaxis (PEP) Guidelines
  - Provincial Biological Waste Management Guidelines
  - Saskatchewan Day Care Regulations
  - Saskatchewan Education Act
  - Public Health Inspection Legislation Manual
  - Public Eating Establishment Regulations and Standards
  - Swimming Pool Regulations and Standards
  - Sanitation Regulations
  - Bakeshop Regulations and Standards
  - Canada Food and Drug Act and Regulations
  - Food Processing Guidelines
  - Meat Processing Guidelines
  - Water Plant Regulations
  - Milk Pasteurization Regulations

Resources:

- Canadian Tuberculosis Standards, Fourth Edition 1996.
- Tuberculosis Control, A Reference Guide to the TB Program in Saskatchewan, February 1998.
- Canadian Communicable Disease Reports, Health Canada
- "Guidelines for the Investigation of Individuals Who Were Placed Under Surveillance for TB Post-Landing in Canada", 1992, Volume 18-20, 153-155.
- "TB Control in Residential Settings, Correctional Facilities", 1996, 33-34.
- "Guidelines for the Identification, Investigation of Individuals with Concomitant TB and HIV Infection, 1992, Volume 18-20, 155-160.

- Guidelines for Preventing the Transmission of Tuberculosis in Canadian Health Care Facilities and Other Institutional Settings Vol. 22S1 April 1996.
- Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Health Care. Revision of Isolation and Precaution Techniques Vol 25S4 July 1999.
- Health Canada. Tuberculosis: Drug resistance in Canada, 1998 Reported susceptibility results of the Canadian Tuberculosis Laboratory Network Surveillance System.
- Health Canada. Tuberculosis in Canada, 1996. Ottawa: The Dept, 1998.
- Gaudette L. Tuberculosis in Canada 1987, Health Rep. 1989; 1(1): 69-79
- Saskatchewan Health. Tuberculosis Control Program 1998 Annual Report
- Ontario
  - Infection Control in Long Term Care Facilities
  - Methadone Guidelines
- Districts
  - Policies and procedures
- National Consensus Document

Resources – Other

- Travex
- Travel Medicine Adviser
- Emporiatrics, Handbook for Health Care Professionals
- The Red Book 2000, 25th Edition, American Academy of Pediatrics, Ed. Pickering, L.K. et al 2000-10-30
- Control of Communicable Diseases Manual, American Public Health Association; editor James Chin
- Health Canada, Centre for Infectious Disease Prevention and Control
  - Published Statements
  - Website
- Canada Communicable Disease Reports and Supplements
- WHO
  - International Travel and Health: Vaccination Requirements and Health Advice
- MMWR
- Center for Disease Control (USA)
  - Statements
  - Website
- Product Monographs
- Principles and Practice of Infectious Diseases Third Edition, Ed. Mandell, Gerald et al
- Harrison's Principles of Internal Medicine 12th Edition, Ed. Wilson, Jead D. et al
- National Sanitation Foundation
- American Water and Waste Water Association

Data Sources:

- Health Canada
  - Centre for Infectious Disease Prevention and Control
- Saskatchewan Health
  - Provincial Laboratory
  - Communicable Disease Control Unit
  - Communicable Disease Statistics
- Health Districts – laboratory, infectious disease specialists, other specialists
- Saskatchewan Practitioners in Infection Control Committee

Glossary & Appendix

Glossary

Determinants of Health Key factors and conditions, some of which are outside the health system, which significantly impact on health. Key determinants include: income and social status, social support networks, education, employment/working conditions, physical and social environments, biology and genetic endowment, personal health practices and coping skills, healthy child development, health services, gender and culture. This list is likely to evolve as more is learned about determinants. *(CPHA, Canada Health Action 21, 1998)*

Health Promotion is the process of enabling people to increase control over, and to improve, their health. To reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Health is, therefore, seen as a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources as well as physical capabilities. Therefore, health promotion is not just the responsibility of the health sector, but goes beyond healthy lifestyles to well-being. (WHO, *Ottawa Charter for Health Promotion*, 1986)
Health promotion represents a comprehensive social and political process. It not only embraces actions directed at strengthening the skills and capabilities of individuals, but also action directed towards changing social, environmental and economic conditions so as to alleviate their impact on public and individual health. Health promotion is the process of enabling people to increase their control over the determinants of health and thereby improve their health. Participation is essential to sustain health promotion action. (WHO, *Health Promotion Glossary*, 1998)

Population Health Approach Key elements of a population health approach are as follows: *(http://www.hc-sc.gc.ca/hppb/phdd/approach/e_approach.html#key_elements)*

- Address Determinants of Health recognizing that they are complex and interrelated. Our understanding of what makes and keeps people healthy continues to evolve and be further refined. A population health approach reflects the evidence that factors outside the health care system or sector significantly affect health. It considers the entire range of individual and collective factors and conditions - and their interactions - that have been shown to be correlated with health status.
- Focus on the Health of Populations
A population health approach focuses on improving the health status of the population. Action is directed at the health of an entire population, or sub-population, rather than individuals. Focusing on the health of populations also necessitates the reduction in inequalities in health status between population groups. An underlying assumption of a population health approach is that reductions in health inequities require reductions in material and social inequities. The outcomes or benefits of a population health approach, therefore, extend beyond improved population health outcomes to include a sustainable and integrated health system, increased national growth and productivity, and strengthened social cohesion and citizen engagement.
- Invest Upstream
Efforts and investments in a population health approach are directed at root causes to increase potential benefits for health outcomes.
The identification and definition of health issues and the investment decisions within a population health approach are guided by parameters based on evidence about what makes and keeps people healthy. A population health approach directs investments to those areas that have the greatest potential to influence population health status positively. A population health approach is grounded in the notion that the earlier in the causal stream action is taken, the greater the potential for population health gains.

- Base Decisions on Evidence

A population health approach uses "evidence-based decision making." Quantitative and qualitative evidence on the determinants of health is used to identify priorities and strategies to improve health. An important part of the population health approach is the development of new sources of evidence on the determinants of health, their interrelationship, and the effectiveness of interventions to improve health and the factors known to influence it.

- Apply Multiple Strategies to Act On the Determinants of Health

A population health approach takes action based on analyses and understandings of the entire range of the determinants of health. A population health approach recognizes the complex interplay between the determinants of health. It uses a variety of strategies and settings to act on the health determinants in partnership with sectors outside the traditional health system or sector. Contemporary research has clearly demonstrated the relationship between population health status and the multiple determinants of health. Our current state of knowledge rests on the notion that the health of populations is correlated with factors that fall outside the health system or established health sector. This understanding has set the context for new approaches to health improvement that draw upon multiple strategies applied within multiple settings. It calls for innovative and interconnected strategies that give due consideration to the full spectrum of social, economic and environmental health determinants. Based on the analysis of evidence, strategies are developed that will have the greatest relative impact on population health risks and conditions. Strategy development includes the identification of (a) who will employ strategies, (b) to whom, (c) when, and (d) where, in order to ensure maximum contribution to desired health outcomes.

- Collaborate Across Levels and Sectors

A population health approach recognizes that improving health is a shared responsibility. "Intersectoral collaboration" is the joint action among health and other groups to improve health outcomes. A population health approach calls for shared responsibility and accountability for health outcomes with groups not normally associated with health, but whose activities may have an impact on health or the factors known to influence it. Intersectoral collaboration in a population health approach includes the horizontal management of health issues. Horizontal management identifies common goals among sectoral partners. It then ensures coordinated planning, development and implementation of their related policies, programs and services.

- Employ Mechanisms to Engage Citizens

A population health approach promotes the participation of all Canadians in developing strategies to improve health. The approach ensures appropriate opportunities for Canadians to have meaningful input into the development of health priorities, strategies and the review of outcomes. A benefit of public involvement is that public confidence in decision making and information sharing is increased, as those Canadians who are most affected by a health issues contribute to possible solutions early in the planning process.

- Increase Accountability for Health Outcomes

A population health approach calls for an increased focus on health outcomes (as opposed to inputs, processes and products) and on determining the degree of change that can actually be attributed to an intervention. Changes are examined in health status, determinants of health and health status inequities between population sub-groups. Process, impact and outcome evaluation are used to assess these changes. Regular and timely reporting of results and sharing of information with partners and Canadians is an integral part of a population health approach.

Population Health Strategy focuses on factors that enhance the health and well-being of the overall population. It views health as an asset that is a resource for daily living, not simply the absence of disease. Population health concerns itself with the living and working conditions that affect people's health, the conditions that enable and support people in making healthy choices, and the services that promote and maintain health. Population health has as its goal the best possible health status for the

entire population. In contrast, health care has as its aim the treatment or rehabilitation of illness. A population health perspective differs from traditional medical and health care thinking in 2 ways:

- Population health strategies address the entire range of individual and collective factors that determine health. Traditional health care focuses on risks and clinical factors related to particular diseases.
- Secondly, population health strategies are designed to affect whole groups or populations of people. Clinical health care deals with individuals one at a time, usually individuals who already have a health problem or are at significant risk of developing one. (*Strategies of Population Health: Investing in the Health of Canadians*, 1994, p.9 -10)

Public Health is one of the efforts organized by society to protect, promote, and restore the people's health. It is the combination of sciences, skills and beliefs that is directed to the maintenance and improvement of the health of all the people through collective or social actions. The programs, services, and institutions involved emphasize the prevention disease and the health needs of the population as a whole. Public health activities change with changing technology and social values, but the goals remain the same: to reduce the amount of disease, premature death and disease-produced discomfort and disability in the population. Public health is thus a social institution, a discipline and a practice. The Acheson Report offered a more succinct definition: The science and art of preventing disease, prolonging life and promoting health through organized efforts of society. (John Last, *A Dictionary of Epidemiology 3rd Edition*, Toronto, Oxford University Press, 1995, p. 134)

A distinction is made in the health promotion literature between 'public health' and the 'new public health' for the purposes of emphasizing significantly different approaches to the description and analysis of the determinants of health and the methods of solving public health problems. This **new public health** is distinguished by its basis in a comprehensive understanding of the ways in which lifestyles and living conditions determine health status and a recognition of the need to mobilize resources and make sound investments in policies, programmes and services which create, maintain and protect health by supporting healthy lifestyles and creating supportive environments for health. Such a distinction between 'old' and 'new' may not be necessary in the future as the mainstream concept of public health develops and expands. (WHO, *Health Promotion Glossary*, 1998)

The concept of **ecological public health** has also emerged in the literature. It has evolved in response to the changing nature of health issues and their interface with emerging global environmental problems. These new problems include global ecological risks such as the destruction of the ozone layer, uncontrolled and unmanageable air and water pollution, and global warming. These developments have a substantial impact on health which often elude simple models of causality and intervention. Ecological public health emphasizes the common ground between achieving health and sustainable development. It focuses on the economic and environmental determinants of health and on the means by which economic investment should be guided towards producing the best population health outcomes, greater equity in health and sustainable use of resources. (WHO, *Health Promotion Glossary*, 1998)

Public Health Nurse (PHN) is a community health nurse who synthesizes knowledge from public health science, nursing science, and the social sciences, in order to promote, protect, and preserve the health of populations. They practice population health promotion in increasingly diverse settings, such as community health centres and community agencies (e.g., Street Health) and with diverse partners to meet the health needs of specific populations. Although the focus of public health nursing practice is health promotion of populations, public health nurses integrate community involvement and knowledge about the entire population with personal, clinical understandings of the health and illness experiences of individuals and families within the population. That is, public health nurses recognize that a community's health is inextricably linked with the health of its constituent members and is often reflected first in individual and family health experiences. The educational preparation for entry to practice as a public health nurse is a baccalaureate degree in nursing and the PHN is licensed by the Saskatchewan Registered

Nurses' Association. (adapted from *Public Health Nursing*, Position Statement by the Community Health Nurses' Interest Group of The Registered Nurses Association of Ontario, 1998)

Public Health Nutritionist applies the art and science of population health promotion via sustainable and equitable improvements in the food and nutrition systems in the community. She or he assesses needs, plans, organizes, manages, directs, coordinates and evaluates nutrition services. This is done using collaborative intersectoral approaches.
Public Health Nutritionists have completed a bachelor's degree in human nutrition plus a dietetic internship and/or a master's degree in human nutrition or a closely related field. Advanced training in public health nutrition is highly recommended. It is achieved through graduate study, a community nutrition residency, a community nutrition internship or through work experience and independent study. Public health nutritionists are eligible for membership in Dietitians of Canada and Saskatchewan Dietetic Association.

Appendix
Project Committee Members

Steering Committee

David Butler-Jones (Chair)
Chief Medical Officer of Health
Saskatchewan Health

Anita Bergman, Board Chairperson,
Regina Health District

Larry Kendel, Board Member
Twin Rivers Health District

Marcie Delday, Board Member
Prairie West Health District

Cecile Hunt
Director, Health Services
North Central Health District

Dr. Cory Neudorf
Medical Officer of Health
Sasktoon District Health

Joan Whiteside
Public Health Nursing Manager
Swift Current Health District

Louis Corkery, Chair
Safe Communities/Environments Sub Committee
Population Health Branch

Dr. Eric Young, Chair
Communicable Diseases Sub Committee
Population Health Branch
Saskatchewan Health

Mary Martin-Smith, (Project Manager)
Chair, Healthy Families Sub Committee
Population Health Branch
Saskatchewan Health

Karen Cooper, Chair
Chronic Disease Prevention Sub Committee
Population Health Branch
Saskatchewan Health

Technical Committees

Healthy Families

Mary Martin-Smith, Chair
Population Health Branch, Saskatchewan Health

Carol Marz, Manager, Public Health Nursing
Regina Health District

Gwen Frank, Public Health Nurse
South Country Health District

Colleen Kells, Manager-Public Health Services
Saskatoon Health District

Sandy Vandane, Public Health Nurse
North Valley Health District

Eunice Misskey, Public Health Nutritionist
Regina Health District

Clara Ellert, Dental Health Educator
South Country Health District

Margaret Rudychuk, Public Health Nurse
Pasquia Health District

Dr. George Benoulou, Medical Health Officer
South Central Health District

Dr. Gerhard Benadé, Medical Health Officer
Battlefords Health District

Chronic Disease Prevention

Karen Cooper, Chair
Population Health Branch
Saskatchewan Health

Mary Anderson, Education Coordinator
Rolling Hills Health District

Dr. Ross Findlater, Deputy Medical Health Officer
Regina Health District

Karen Grauer, Public Health Nurse
Saskatoon Health District

Pat Mazur, Active Living Coordinator
Regina Health District

Linda Gilmour-Kessler, Nutritionist
Moose Jaw-Thunder Creek Health District

Heather Torrie, Nutritionist
East Central Health District

Jill Eyolfson, Public Health Nurse
Midwest Health District

Karen Lehman, Public Health Nurse
South Country Health District

Isabelle Moore, Public Health Nurse
Moose Jaw-Thunder Creek Health District

Bob Stone, Senior Public Health Inspector
Regina Health District

Safe Environments/Safe Communities
Louis Corkery (Chair)
Population Health Branch
Saskatchewan Health

Dan West, Board Member,
Rolling Hills Health District

Janice Giroux
Associate Vice President of Community Services
South Central Health District

Mark Vooght, Medical Health Officer
Moose Jaw-Thunder Creek Health District

Bryce Graham, Manager -Safe Communities
Public Health Services
Saskatoon Health District

Jane Lyster, Director of Environmental Health
Mamawetan Churchill River Health District

Ian Harrison, Public Health Inspector
South Central Health District

Ron Belak, Senior Public Health Inspector
Midwest Health District

Sharon Garratt, Health Promotion
Regina Health District

Communicable Disease Control
Dr. Eric Young (Chair)
Deputy Chief Medical Health Officer
Saskatchewan Health

Dr. Tania Diener, Medical Health Officer
Regina Health District

Janice Chomyn, Manager-Public Health Services
Saskatoon Health District

Bonnie Rushowick, Public Health Nurse
Manager
East Central Health District